PONY
سلسلة كتب الاستاذ
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4
PRIMARY
FIRST TERM

Contents

Theme 1
Number Sense and Operations

Theme 2
Mathematical Operations and Algebraic Thinking

Theme 1

Number Sense and Operations

Unit 1 Place Value

Concept 1.1: Reinforcing Place Value

Concept 1.2: Using Place Value

Unit 2 Addition and Subtraction Strategies

Concept 2.1: Using Addition and Subtraction Strategies

Concept 2.2: Solving Multistep Problems

Unit 3 Concepts of Measurement

Concept 3.1: Metric Measurement

Concept 3.2: Measuring Time

Unit 4 Area and Perimeter

Concept 4.1: Explore Area and Perimeter

Reinforcing Place Value

Big Numbers!
Changing Place Values

Learning Objectives:

By the end of these lessons, the student will be able to:

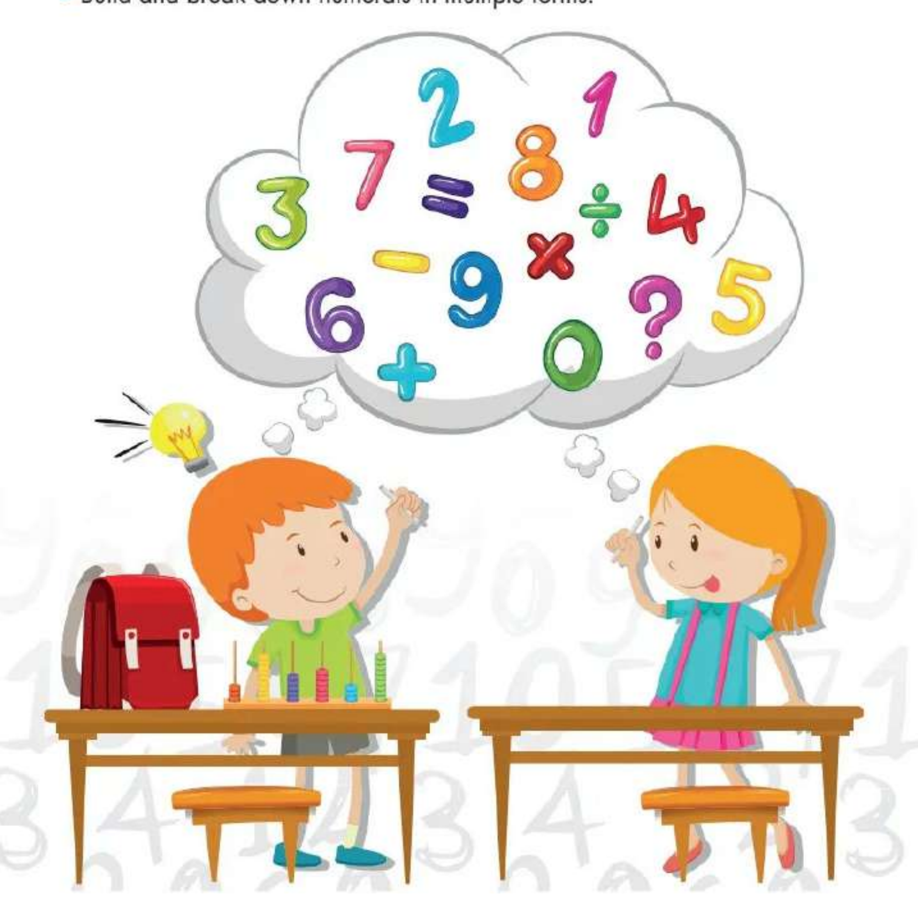
- Identify all whole number place values through the One Milliard place.
- Explain how a digit's location in a number affects its value.
- Explain how the value of a digit changes as it moves to the left in a number.
- Describe the patterns I see as a digit changes value.

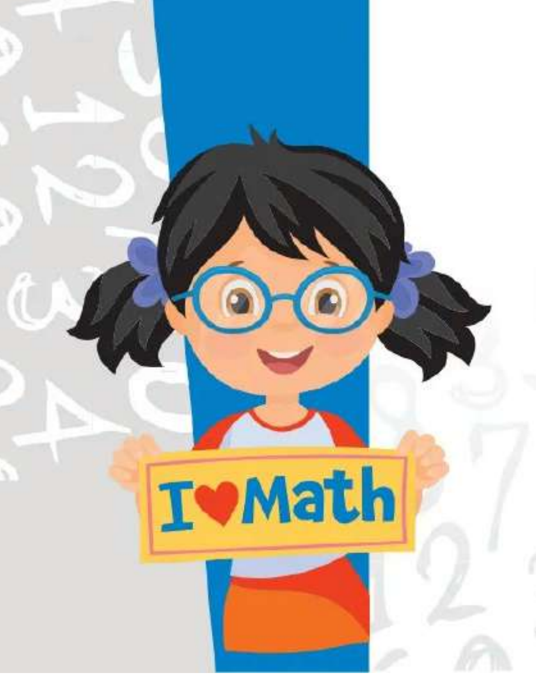
Many Forms to Write Numbers
Composing and Decomposing

Learning Objectives:

By the end of these lessons, the student will be able to:

- Write the numerals in standard, word, and expanded forms.
- Build and break down numerals in multiple forms.





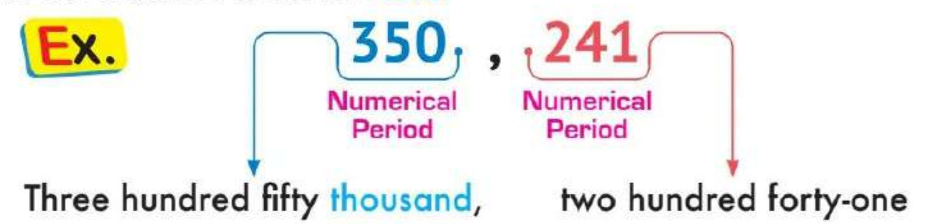
Big Numbers!
Changing Place Values

Remember

To read a number:

- Divide the number into **numerical periods** (from the right). Each period consists of **3** digits.
- Read the number from the **left**.

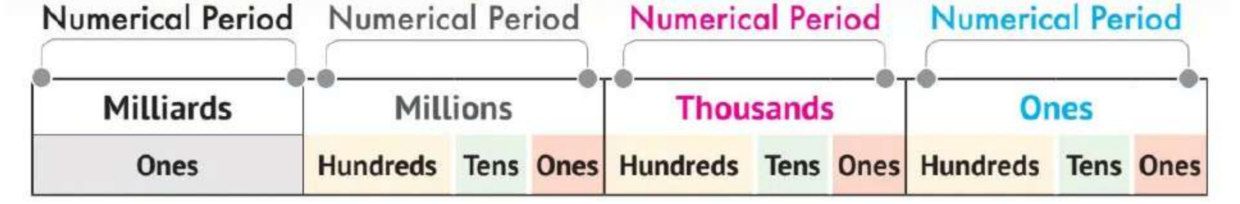
Ex.



Three hundred fifty **thousand**, two hundred forty-one

Learn

There is a numerical period called Milliards, followed by another numerical period called Millions, as follows:



Numerical Period	Numerical Period			Numerical Period			Numerical Period		
Milliards	Millions			Thousands			Ones		
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones

Ex. **Use the following place value table to read the shown number:**

Milliards	Millions			Thousands			Ones		
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones
		3	5	8	9	1	4	5	5

- The previous number is read **from left to right**, so that **each number** is followed by **the name of the period**:

Thirty-five **million**, eight hundred ninety-one **thousand**, four hundred fifty-five.

Digit	رقم	Number	عدد
Numerical period	مجموعة عددية	Place value	القيمة المكانية

Ex. **Use the following place value table to read the shown number:**

Milliards	Millions			Thousands			Ones		
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones
3	9	9	0	7	0	2	5	7	1

– The previous number is read as:

Three **milliard**, nine hundred ninety **million**, seven hundred two **thousand**, five hundred seventy-one.

1 **Use the following place value tables to read the shown numbers:**

ⓐ

Milliards	Millions			Thousands			Ones		
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones
		2	7	2	5	4	9	8	5

– The previous number is read as: ....

Twenty-seven million, two hundred fifty-four thousand, nine hundred eighty-five.

ⓑ

Milliards	Millions			Thousands			Ones		
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones
1	3	9	0	4	0	2	6	5	0

– The previous number is read as: ....

One Milliard, three hundred ninety million, four hundred two thousand, six hundred fifty.

2 **Write the following numbers in standard form:**

ⓐ Forty-five million, one hundred twenty-five thousand, one hundred twenty-three. (**45,125,123**)

ⓑ Two hundred fifty-nine million, twenty-four thousand. (**259,024,000**)

ⓒ Two hundred seventy-eight million, nine hundred eighty-six. (**278,000,986**)

d Nine milliard, one hundred nine million, five hundred. (9,109,000,500)

e Three milliard, sixty-five million, twenty-six thousand, forty-five. (3,065,026,045)

f Four milliard, five million, nine thousand, eighty. (4,005,009,080)

g Ten milliard, fifty thousand, two hundred. (10,000,050,200)

h Six milliard, five million, forty. (6,005,000,040)

3 Write the following numbers in word form:

a 5,214,320: Five million, two hundred fourteen thousand, three hundred twenty .

b 45,150,200: Forty-five million, one hundred fifty thousand, two hundred. .

c 714,058,009: Seven hundred fourteen million, fifty-eight thousand, nine .

d 405,006,047: Four hundred five million, six thousand, forty-seven. .

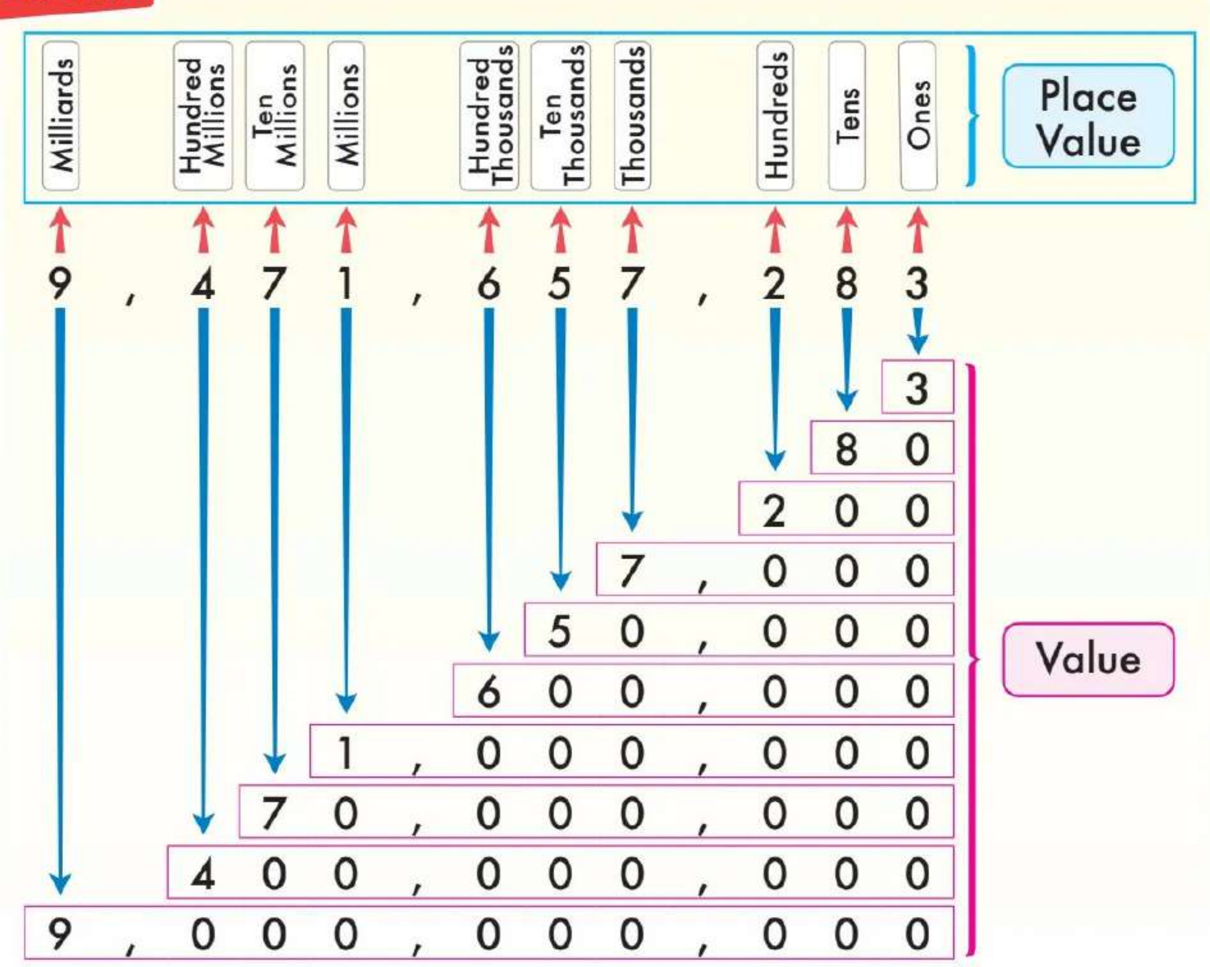
e 7,504,630,412: Seven milliard, five hundred four million, six hundred thirty thousand, four hundred twelve. .

f 3,025,040,007: Three milliard, twenty-five million, forty-thousand, seven .

g 9,000,500,000: Nine milliard, five hundred thousand .

h 8,030,020,000: Eight milliard, thirty million, twenty thousand .

Learn



Ex. **In 9,471,657,283:**

- The digit 6 is in the Hundred Thousands place. **So**, its place value is Hundred Thousands and its value is 600,000.
- The digit 2 is in the Hundreds place. **So**, its place value is Hundreds and its value is 200.

- The value of **0** in any place is **0**

In 5,025,369,158:

- The digit 0 is in the Hundred Millions place. **So**, its place value Hundred Millions and its value is 0.

4 Write the place value and the value of the encircled digit in the following numbers:

	Number	Place Value	Value
a	86,7(2)0,543	Ten Thousands	20,000
b	23(9),418,207	Millions	9,000,000
c	463,357,1(0)0	Tens	0
d	70,(6)25,124	Hundred Thousands	600,000
e	(8),792,134,566	Milliards	8,000,000,000

5 In each of the following numbers, find the place value and the value of the digit (7):

a In 35,785,692, the digit 7 is in the Hundred Thousands place and its value is 700,000.

b In 2,522,573, the digit 7 is in the Tens place and its value is 70.

c In 7,325,864,125, the digit 7 is in the Milliards place and its value is 7,000,000,000

d In 125,000,347, the digit 7 is in the Ones place and its value is 7.

e In 27,000,210, the digit 7 is in the Millions place and its value is 7,000,000.

f In 2,700,200,300, the digit 7 is in the Hundred Millions place and its value is 700,000,000.

6 **Underline the digit in the Ten Millions place:**

a) 2,5<u>8</u>7,924,388

b) <u>2</u>5,348,975

c) 9<u>6</u>2,525,252

7 **Underline the digit in the Thousands place:**

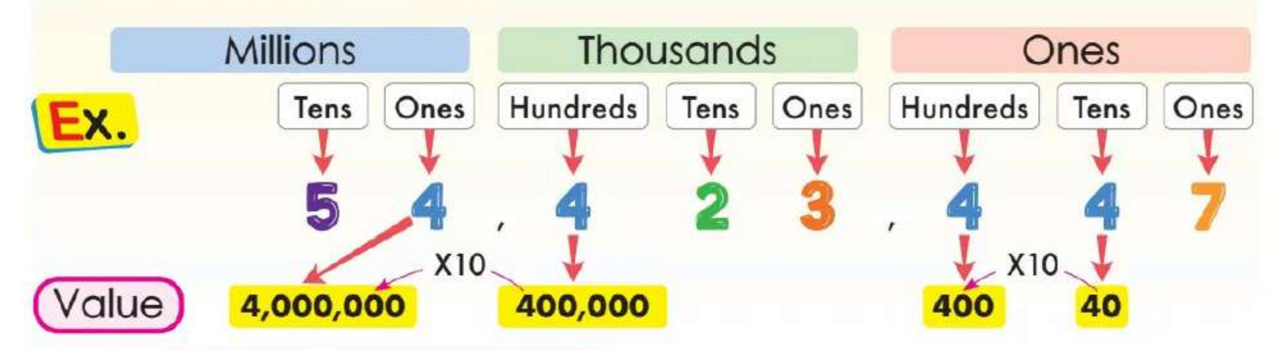
a) 345,82<u>3</u>,622

b) 9,90<u>9</u>,909

c) 25<u>3</u>,332

Learn

- The **value** of the number changes depending on **where it is located**, as in the following example:



From the previous example,

- We notice that the **value** of the digit **4** increases by **10** times when it moves **one step** to the **left**.

8 **Complete the following:**

a) The value of the digit 3 in the **Hundreds** place is ....300.... .

b) The value of the digit 7 in the **Ten Millions** place is ....70,000,000.... .

c) The value of the digit 4 in the **Thousands** place is ....4,000.... .

d) The value of the digit 6 in the **Milliards** place is ....6,000,000,000.... .

e) The value of the digit 7 in the **Ten Thousands** place is ....70,000.... .

Ex.

ⓐ 70,000,000 = ...70...... Millions

ⓑ 80,000 Thousands = ...80,000,000...

ⓒ 5000 Hundred Thousands = ...50... Millions

9 Complete the following:

ⓐ 5,000,000 = ...5,000..... Thousands

ⓑ 8,000,000 = ...8........ Millions

ⓒ 50 Tens = ...500............

ⓓ 60 Ten Thousands = ...600,000.......

ⓔ 50 Hundreds = ...500...... Tens

ⓕ 800 Hundreds = ...80.... Thousands

ⓖ 900 Hundred Millions = ...90.... Milliards

ⓗ 60 Millions = 6,000. Ten Thousands

10 In a colony with 10 anthills, each anthill has the same number of ants. Complete the following table:

The number of ants in each hill	7	12	28	92	156	1,786
The number of ants in all hills	70	120	280	920	1,560	17,860

10

1 Complete the following:

a) 60,025,703 (in word form) is .... Sixty million, twenty-five thousand, seven hundred three ....

b) The place value of the digit 5 in 64,250,330 is ...... Ten Thousands ....

c) The value of the digit 0 in the Ten Millions place is ...... 0 ....

2 Complete the following:

a) 400,000 Hundreds = ... 40 ...... Millions. (4 or [40] or 400 or 4,000)

b) The value of the digit 8 in ..823,686.. is 800,000.
(80,075 or 560,800 or [823,686], or 8,002,369)

c) The digit that represents the Ten Millions in 95,673,547,123 is ...... 7 .... (9 or [7] or 4 or 2)

3 Match:

a) Sixty million, six thousand, sixty		66,000,600 (1)
b) Sixty million, six thousand, six		60,006,060 (2)
c) Sixty-six million, six hundred		66,006,000 (3)
d) Sixty-six million, six thousand		60,006,006 (4)

(Answers: a → 2, b → 4, c → 1, d → 3)

Theme 1

Lessons 3&4 Many Forms to Write Numbers Composing and Decomposing

Standard Form

- It is a way of using **digits** to write a number.

Ex. 35,254

Expanded Form

- It is a way of using the **value** of each digit to write a number.

Ex. 30,000 + 5,000 + 200 + 50 + 4

Word Form

- It is a way of using **words** to write a number.

Ex. Thirty-five thousand, two hundred fifty-four.

Short Word Form

- It is a way of using **digits** and **words** to write a number.

Ex. 35 thousand, 254

Ex. **Write the number represented on the place value table in different forms:**

Milliards	Millions			Thousands			Ones		
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones
6	4	2	2	6	1	1	3	2	4
6 milliard	422 million			611 thousand			324		

- **Standard Form** : 6,422,611,324
- **Expanded Form** : 6,000,000,000 + 400,000,000 + 20,000,000 + 2,000,000 + 600,000 + 10,000 + 1,000 + 300 + 20 + 4
- **Word Form** : Six milliard, four hundred twenty-two million, six hundred eleven thousand, three hundred twenty-four.
- **Short Word Form**: 6 **milliard**, 422 **million**, 611 **thousand**, 324

Standard form	الصيغة القياسية	Expanded form	الصيغة الممتدة	Word form	الصيغة اللفظية

Ex. Use the following place value table to write the number in different forms:

Milliards	Millions			Thousands			Ones		
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones
4	9	0	2	0	7	0	0	1	5
4 milliard	902 million			70 thousand			15		

– **Standard Form** : 4,902,070,015

– **Expanded Form** : 4,000,000,000 + 900,000,000 + 2,000,000 + 70,000 + 10 + 5

– **Word Form** : Four milliard, nine hundred two million, seventy thousand, fifteen.

– **Short Word Form**: 4 **milliard**, 902 **million**, 70 **thousand**, 15

1 Write the following numbers in word form:

ⓐ 17,200,523: **Seventeen million, two hundred thousand, five hundred twenty-three.**

ⓑ 100,020,045: **One hundred million , twenty thousand, forty-five.**

ⓒ 20,000,000 + 100,000 + 400 + 50 + 9: **20,100,459: Twenty million, one hundred thousand, four hundred fifty-nine.**

ⓓ 7,000,000,000 + 50,000 + 200: **7,000,050,200: Seven milliard (billion), fifty thousand, two hundred.**

2 Write the following numbers in standard form:

a) Five million, twenty-five thousand, two hundred three: 5,025,203

b) Three milliard, three million, three thousand, three: 3,003,003,003

c) 9,000,000,000 + 40,000,000 + 80,000 + 200 + 6 = 9,040,080,206

d) 7,000,000,000 + 500,000 + 200 = 7,000,500,200

3 Write the expanded form of the following numbers:

a) 40,300,102 = 40,000,000 + 300,000 + 100 + 2 .

b) 7,000,080,006 = 7,000,000,000 + 80,000 + 6 .

c) Seven milliard, fifty thousand, two hundred = 7,000,000,000 + 50,000 + 200 .

d) One hundred fifty million, twenty-nine thousand, three hundred sixteen = 100,000,000 + 50,000,000 + 20,000 + 9,000 + 300 + 10 + 6 .

Composing and Decomposing

Decomposing numbers (expanded notation), by using the following place value table:

Milliards	Millions			Thousands			Ones		
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones
4	9	7	5	3	1	8	6	4	2
(4 X 1,000,000,000)	(9 X 100,000,000)	(7 X 10,000,000)	(5 X 1,000,000)	(3 X 100,000)	(1 X 10,000)	(8 X 1,000)	(6 X 100)	(4 X 10)	(2 X 1)

Composing	تكوين	Decomposing	تحليل	Expanded Notation	الصيغة التحليلية

From the previous value table:

Digit	Place	Value	
2	Ones	2	= (2 X 1)
4	Tens	40	= (4 X 10)
6	Hundreds	600	= (6 X 100)
8	Thousands	8,000	= (8 X 1,000)
1	Ten Thousands	10,000	= (1 X 10,000)
3	Hundred Thousands	300,000	= (3 X 100,000)
5	Millions	5,000,000	= (5 X 1,000,000)
7	Ten Millions	70,000,000	= (7 X 10,000,000)
9	Hundred Millions	900,000,000	= (9 X 100,000,000)
4	Milliards	4,000,000,000	= (4 X 1,000,000,000)

So: **Composed Number:** 4,975,318,642

Decomposed Number (Expanded Notation):

(4 X 1,000,000,000) + (9 X 100,000,000) + (7 X 10,000,000) +
(5 X 1,000,000) + (3 X 100,000) + (1 X 10,000) + (8 X 1,000) + (6 X 100)
(4 X 10) + (2 X 1)

4 **Use the following place value tables to compose and decompose the numbers:**

ⓐ

Milliards	Millions			Thousands			Ones		
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones
8	0	2	7	0	5	0	0	0	6

1. Composed Number: .... 8,027,050,006 ....

2. Decomposed Number (Expanded Notation):

.... (8 X 1,000,000,000) + (2 X 10,000,000) + ...
.... (7 X 1,000,000) + (5 X 10,000) + (6 X 1) ....

Theme 1

(b)

Milliards	Millions			Thousands			Ones		
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones
6	0	0	0	9	2	0	5	9	0

1. Composed Number: 6,000,920,590 .
2. Decomposed Number (Expanded Notation):

(6 X 1,000,000,000) + (9 X 100,000) + (2 X 10,000) + (5 X 100) + (9 x 10)

(c)

Milliards	Millions			Thousands			Ones		
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones
		2	0	0	1	4	0	2	3

1. Composed Number: 20,014,023
2. Decomposed Number (Expanded Notation):

(2 X 10,000,000) + (1 X 10,000) + (4 X 1,000) + (2 X 10) + (3 X 1)

5 Compose the following numbers:

(a) (8 X 10,000,000) + (7 X 10,000) + (2 X 10) + (1 X 1) = 80,070,021 .

(b) (2 X 1,000,000,000) + (9 X 10,000) + (8 X 1,000) + (5 X 100)
= 2,000,098,500 .

(c) 900,000,000 + 200,000 + 50,000 + 200 + 9 = 900,250,209 .

6 Write the following numbers in expanded form:

(a) (6 X 10,000,000) + (7 X 1,000,000) + (1 X 100,000) + (2 X 10,000) + (5 X 1,000) + (1 X 10) + (2 X 1) = 60,000,000 + 7,000,000 + 100,000 + 20,000 + 5,000 + 10 + 2 .

(b) 7,024,650:

7,000,000 + 20,000 + 4,000 + 600 + 50 .

(c) Seventy-five million, thirty thousand, four hundred sixty:

70,000,000 + 5,000,000 + 30,000 + 400 + 60 .

7 **Write the following numbers in expanded notations:**

ⓐ Five million, two hundred sixty-four thousand, one hundred fifteen:

(5 X 1,000,000) + (2 X 100,000) + (6 X 10,000) + (4 X 1,000) + (1 X 100) + (1 X 10) + (5 X 1).

ⓑ 10,200,548 = (1 X 10,000,000) + (2 X 100,000) + (5 X 100) + (4 X 10) + (8 X 1).

ⓒ 2,000,000,000 + 200,000 + 50 + 7 = (2 X 1,000,000,000) + (2 X 100,000) + (5 X 10) + (7 X 1).

10

1 **Complete the following:**

ⓐ 700,000,000 + 126,000 + 450 = 700,126,450. (in standard form)

ⓑ 33,025,000 = 33 millions, 25 thousands. (in short word form)

ⓒ 40,508 = (4 X 10,000) + (5 X 100) + (8 X 1)

2 **Choose the correct answer:**

ⓐ (5 X 10,000,000) + (3 X 10,000) + (6 X 100) = 50,030,600

(50,300,060 or 50,030,600 or 50,300,600 or 50,060,030)

ⓑ 8 Milliards, 8 Thousands = 8,000,008,000

(8,000,008,000 or 8,000,800,000 or 88,000 , or 8,008,000)

ⓒ 70 Hundred Millions = 7 Milliards .

(700 Millions or 7 Milliards or 7,000 Thousands or 70,000 Thousands)

3 **Write the number shown in the following table in the different forms:**

Milliards	Millions			Thousands			Ones		
O	H	T	O	H	T	O	H	T	O
7	3	0	0	0	4	0	0	0	8

ⓐ Composed: 7,300,040,008.

ⓑ Decomposed: (7 X 1,000,000,000) + (3 X 100,000,000) + (4 X 10,000) + (8 X 1).

Using Place Value

Comparing Big Numbers
Comparing Numbers in Multiple Forms
Descending and Ascending Numbers

Learning Objectives:

By the end of these lessons, the student will be able to:

- Use symbols place value to compare large numerals.
- Compare numbers in multiple forms.
- Describe strategies he/she uses to compare numbers.
- Order numbers in multiple forms.
- Describe strategies he/she uses to order.

Rounding Rules

Learning Objectives:

By the end of these lessons, the student will be able to:

- Use multiple strategies to round numbers.
- Identify which estimation strategy provides more accurate estimates.

Comparing Big Numbers
Comparing Numbers in Multiple Forms
Descending and Ascending Numbers

Learn

- To compare two numbers, do the following:

First: If the number of digits of each number is different.

▶ **The number that has more digits is the greatest.**

Six digits

81,016

Five digits

Second: If the number of digits of each number is equal.

▶ **Compare the value of the digits of the two numbers from left to right:**

ⓐ **245,568 < 567,984**

⇒ Because the value of the digit 5 is greater than the value of the digit 2.

ⓑ **78,620 > 76,902**

⇒ Because the value of the digit 8 is greater than the value of the digit 6.

ⓒ **952,105 < 958,601**

⇒ Because the value of the digit 8 is greater than the value of the digit 2.

- Different forms can be converted to the **standard form** to facilitate the comparison process.

Ex. **Compare using (< , = or >):**

325,050,240

Three hundred twenty-five million, fifty thousand, two hundred forty

325,500,240

300,000,000 + 20,000,000 + 5,000,000 + 500,000 + 200 + 40

1 Complete the following table using (< , = or >):

a	20,900,852	>	19,899,510
b	Three hundred twenty-five thousand, fourteen 325,014	=	300,000 + 20,000 + 5,000 + 10 + 4 325,014
c	(9 X 1,000,000) + (3 X 10,000) + (9 X 1,000) + (8 X 100) + (7 x 10) 9,039,870	<	90,000,000 + 30,000 + 9,000 + 800 + 70 90,039,870
d	2,000,500,250	<	Two milliard, five hundred million, two hundred fifty thousand 2,500,250,000
e	Nine milliard 9,000,000,000	>	(9 X 100,000,000) + (9 X 10,000,000) + (9 X 1,000,000) 999,000,000

Ascending Order

- It is ordering numbers from the **least** to the **greatest**.

Descending Order

- It is ordering numbers from the **greatest** to the **least**.

Ex. To arrange the following numbers:

351,724 , 315,742 , 351,472 , 315,247

We compare each digit in the numbers from left to right.

3̸51,724 , 3̸15,742 , 3̸51,472 , 3̸15,247

If the first digits from the left are **equal**, we compare the next digits until we reach the **different** digits.

3̸(5)1,7 2 4 , 3̸(1)5,7 4 2 , 3̸(5)1,4 7 2 , 3̸(1)5,2 4 7

So, the ascending order : **315,247 , 315,742 , 351,471 , 351,724**

the descending order : **351,724 , 351,471 , 315,742 , 315,247**

2 **Arrange the following numbers in a descending order:**

ⓐ 520,000 , 205,000 , 502,000 , 250,000

520,000 , 502,000 , 250,000 , 205,000

ⓑ 364,250 , 643,205 , 346,205 , 436,250

643,205 , 436,250 , 364,250 , 346,205

3 **Arrange the following numbers in an ascending order:**

ⓐ 999,999 , 9,000,000 , 100,000 , 900,900

100,000 , 900,900 , 999,999 , 9,000,000

ⓑ 78,090 , 79,010 , 78,091 , 79,100 , 78,999

78,090 , 78,091 , 78,999 , 79,010 , 79,100

4 **Arrange the following numbers in an ascending order (Numbers can be written using the standard form):**

	Number	Standard Form	Order
ⓐ	Three milliard, ten million, two thousand, fifty	3,010,002,050	3
ⓑ	Three milliard, one hundred million, twenty thousand, five	3,100,020,005	4
ⓒ	Three milliard, one million, two hundred thousand, five hundred	3,001,200,500	2
ⓓ	Three milliard, one hundred million, two hundred thousand, one hundred	3,100,200,100	5
ⓔ	Three milliard, one million, two thousand, five	3,001,002,005	1

5 **Arrange the following numbers in a descending order (Numbers can be written using the standard form):**

	Number	Standard Form	Order
ⓐ	Four milliard, sixty thousand, seven	4,000,060,007	3
ⓑ	(4 X 1,000,000,000) + (6 X 100,000) + (7X10)	4,000,600,070	2
ⓒ	4,000,000,000 + 600,000 + 700	4,000,600,700	1
ⓓ	4,000,006,700	4,000,006,700	4
ⓔ	Four milliard, six thousand, seventy	4,000,006,070	5

10

1 Complete using (< , = or >):

a) 40,020,090 **=** (4 X 10,000,000) + (2 X 10,000) + (9 X 10)

b) 18 Millions, 5 Thousands **>** 10,000,000 + 800,000 + 5,000

c) 40 Hundred Millions **>** 4,000 Thousands

2 Choose the correct answer:

a) Nine Hundred Millions < **1,000,000,000**

(80,000,000 or 879,000,000 or 99,000,000 or [1,000,000,000])

b) 30,000 > **3 x 1,000**

(3 X 10,000 or 3 X 100,000 or [3 X 1,000], or 4 X 10,000)

c) Which of the following is less than one hundred thousand **10,000** .

(1,000,000 or 111,111 or 100,000 or [10,000])

3 Arrange the following numbers:

a) 785,368 , 788,635 , 783,568 , 786,385

1. Ascending order: **783,568 , 785,368 , 786,385 , 788,635**
2. Descending order: **788,635 , 786,385 , 785,368 , 783,568**

b) 500,500 , 550,000 , 500,005 , 505,000

1. Ascending order: **500,005 , 500,500 , 505,000 , 550,000**
2. Descending order: **550,000 , 505,000 , 500,500 , 500,005**

Rounding Rules

Rounding

It is replacing a number with a simpler number that is close to the original number.

The symbol (≈) is called "approximately equal".

Rounding Strategies

First: **The Midpoint Strategy:**

Ex. **Round the number 468 to the nearest Ten:**

From the number line, we notice that:

⇒ The number 468 is located between the numbers **460 and 470**.

⇒ And the **midpoint** between the two numbers is **465**.

So, 468 is closer to 470.

$468 \approx 470$ (To the nearest Ten)

470
468
465
460
Midpoint
Closer
Farther

Ex. **Round the number 724 to the nearest Hundred:**

From the number line, we notice that:

⇒ The number 724 is located between the numbers **700 and 800**.

⇒ And the **midpoint** between the two numbers is **750**.

So, 724 is closer to 700.

$724 \approx 700$ (To the nearest Hundred).

800
750
724
700
Midpoint
Farther
Closer

Midpoint	نقطة المنتصف	Rounding	التقريب	Approximately equal	يساوي تقريبًا

Theme 1

- When the number is in the **middle**, it is closer to the **greatest number**.

Ex. **Round the number 650 to the nearest Hundred:**

700
650
Midpoint
600

From the number line, we notice that:

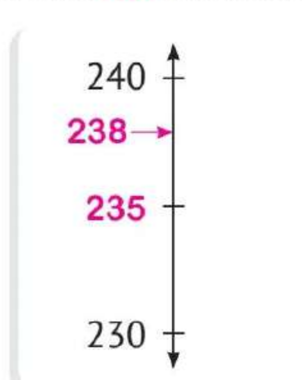
⇒ The number 650 is located between the two numbers **600 and 700** at the middle (**midpoint**).

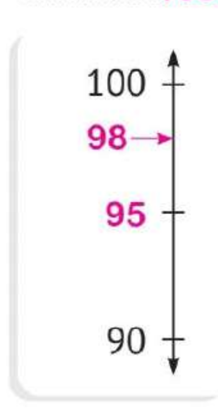
So, 650 ≈ 700 (To the nearest Hundred)

1 **Write down the midpoint of the number line. Then, locate each number on the number line. Round each number to the nearest Ten:**

ⓐ 238 ≈ **240**

ⓑ 98 ≈ **100**

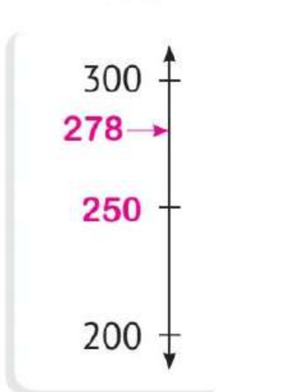


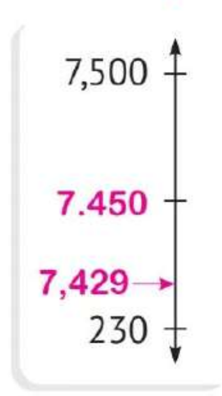


2 **Write down the midpoint of the number line. Then, locate each number on the number line. Round each number to the nearest Hundred:**

ⓐ 278 ≈ **300**

ⓑ 7,429 ≈ **7,400**





3 **Write down the midpoint of the number line. Then, locate each number on the number line. Round each number to the nearest Thousand:**

ⓐ 4,500 ≈ **5,000**

ⓑ 11,157 ≈ **11,000**

4 **Write down the midpoint of the number line. Then, locate each number on the number line. Round each number to the nearest Million:**

ⓐ 9,208,504 ≈ **9,000,000**

ⓑ 22,699,205 ≈ **23,000,000**

Second: Rounding Rule:

When rounding with a given place value:

1. We select the digit in the place to be rounded.
2. We replace the digits in the places that precede the previously selected digit with **zeros**.
3. We look at the digit in the place preceding the place to be rounded directly.

If this digit is **0, 1, 2, 3,** or **4**, the number of the specified place remains **unchanged**.

If this digit is **5, 6, 7, 8** or **9**, we **add 1** to the number of the specified place.

Ex. **Round the following numbers to the nearest 10:**

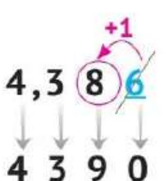
ⓐ

7 (2) 4

7 2 0

724 ≈ 720 (To the nearest 10)

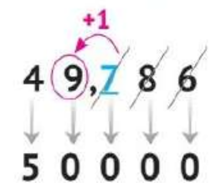
ⓑ



4,386 ≈ 4,390 (To the nearest 10)

Ex. **Round the following numbers to the nearest 1,000:**

ⓐ



49,786 ≈ 50,000
(To the nearest 1,000)

ⓑ

7 (3),4 6 5

7 3 0 0 0

73,465 ≈ 73,000
(To the nearest 1,000)

Ex. Round the following numbers to the nearest 1,000,000:

ⓐ 15,170,728 → 15 000 000

15,170,728 ≈ 15,000,000

ⓑ 50,933,206 (+1) → 51 000 000

50,933,206 ≈ 51,000,000

5 Round the following numbers to the nearest 10:

ⓐ 255 ≈ 260
ⓑ 368 ≈ 370
ⓒ 73 ≈ 70
ⓓ 96 ≈ 100
ⓔ 12,257 ≈ 12,260
ⓕ 123,992 ≈ 123,990

6 Round the following numbers to the nearest 100:

ⓐ 750 ≈ 800
ⓑ 6,897 ≈ 6,900
ⓒ 71,915 ≈ 71,900
ⓓ 999 ≈ 1,000
ⓔ 29,990 ≈ 30,000
ⓕ 1,527 ≈ 1,500

7 Round the following numbers:

ⓐ 15,523 ≈ 16,000 (To the nearest 1,000)
ⓑ 86,165 ≈ 90,000 (To the nearest 10,000)
ⓒ 987,625 ≈ 1,000,000 (To the nearest 100,000)
ⓓ 452,652,251 ≈ 453,000,000 (To the nearest 1,000,000)
ⓔ 669,458,562 ≈ 669,460,000 (To the nearest 10 Thousand)
ⓕ 6,100,000,000 ≈ 6,000,000,000 (To the nearest Milliard)

10

1 Complete the following:

a) 250,000 ≈ 300,000 (To the nearest Hundred Thousands)

b) 362,274 ≈ 360,000 (To the nearest Ten Thousands)

c) 73,983 ≈ 74,000 (To the nearest Hundred)

2 Choose the correct answer:

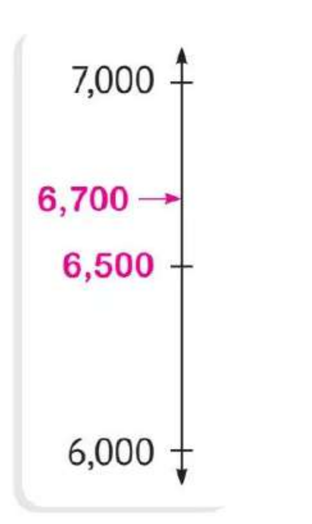
a) 342,698 ≈ 343,000 (To the nearest Thousand)
(342,698 or 343,567 or 342,098 or 343,721)

b) 7,395 ≈ 7,400 (To the nearest Hundred)
(3,423 or 7,494 or 7,395 , or 7,340)

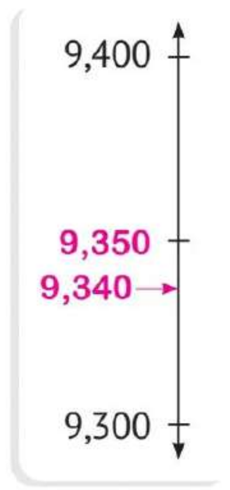
c) 5,256,747,023 ≈ 5 milliard (To the nearest Milliard)
(6 milliard or 5 milliard or 5,200 million or 5,300 million)

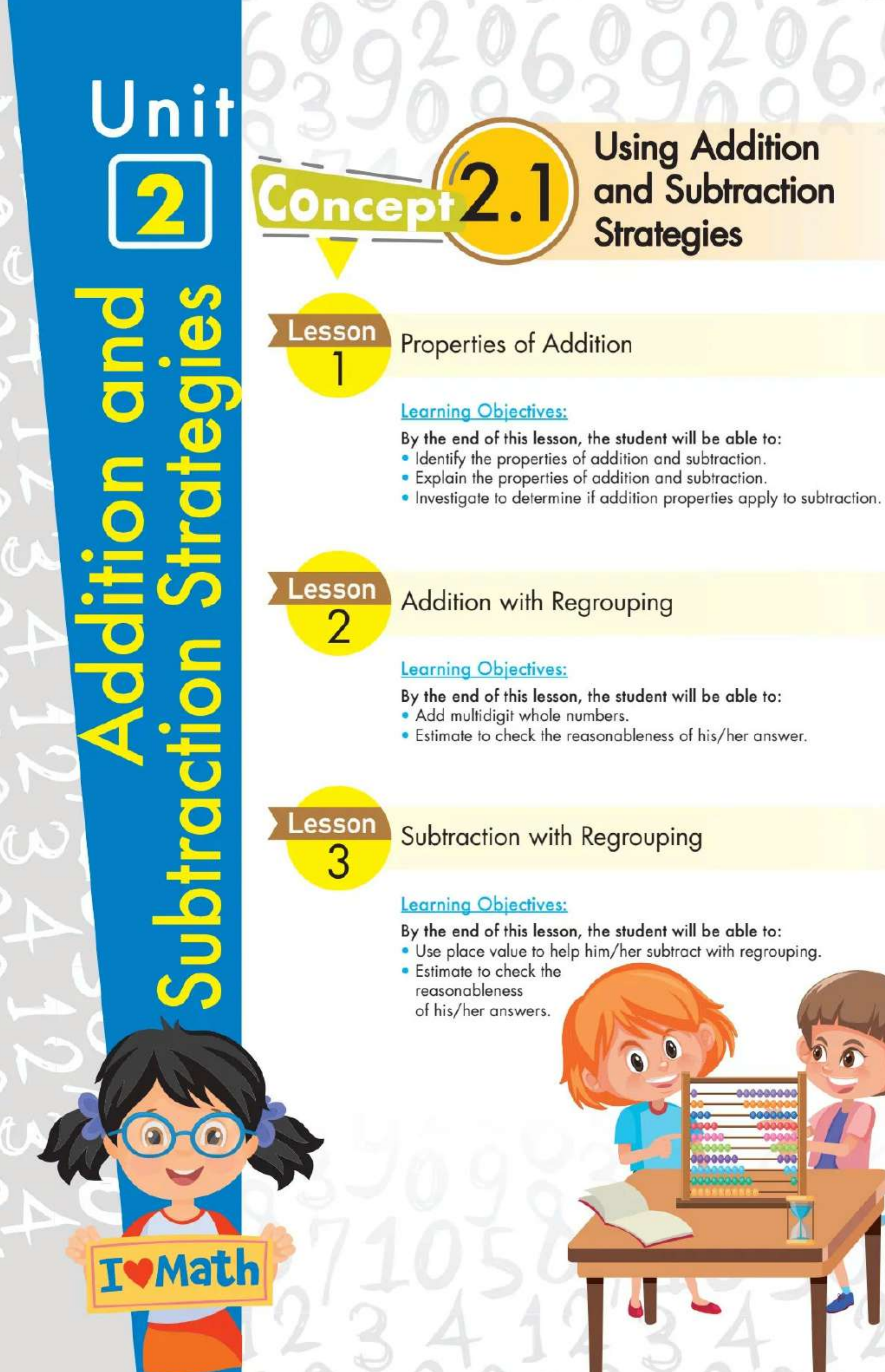
3 Write down the midpoint of the number line. Then, locate each number on the number line and round each number:

a) 6,700 ≈ 7,000
(To the nearest Thousand)



b) 9,340 ≈ 9,300
(To the nearest Hundred)





Concept 2.1 Using Addition and Subtraction Strategies

Lesson 1 Properties of Addition

Learning Objectives:

By the end of this lesson, the student will be able to:
- Identify the properties of addition and subtraction.
- Explain the properties of addition and subtraction.
- Investigate to determine if addition properties apply to subtraction.

Lesson 2 Addition with Regrouping

Learning Objectives:

By the end of this lesson, the student will be able to:
- Add multidigit whole numbers.
- Estimate to check the reasonableness of his/her answer.

Lesson 3 Subtraction with Regrouping

Learning Objectives:

By the end of this lesson, the student will be able to:
- Use place value to help him/her subtract with regrouping.
- Estimate to check the reasonableness of his/her answers.

Lesson 1 Properties of Addition

Learn

Properties of Addition

First: **Additive Identity Property:**

- **Identity element:** is the whole number that can be added to any whole number **without changing the result**.

The **Additive Identity Element** is **zero**.

Ex. 24,256 + 0 = 24,256 , 0 + 3,648 = 3,648

Second: **Commutative Property:**

- The sum of two numbers **does not change** by switching their **order**.

Ex. 24 + 12 = 36 **and** 12 + 24 = 36

So, 24 + 12 = 12 + 24

Third: **Associative Property:**

- If more than two numbers are added, we can add them in **any order**.

Ex. 10 + 5 + 30:

10 + 5 + 30	10 + 5 + 30
= (10 + 5) + 30	= 10 + (5 + 30)
= 15 + 30	= 10 + 35
= 45	= 45

So, 10 + 5 + 30 = (10 + 5) + 30 = 10 + (5 + 30)

Property	خاصية	Commutative	إبدال	Identity	محايد	Associative	تجميع / دمج

1 **Complete using (Identity Element or Commutative or Associative):**

a) 5 + 3 = 3 + 5 "Commutative *Property*"

b) 54 + 0 = 54 "Identity Element *Property*"

c) 7 + 9 + (3 + 4) = (7 + 9) + 3 + 4 "Associative *Property*"

d) 254 + 328 = 328 + 254 "Commutative *Property*"

e) 24,125 + 0 = 24,125 "Identity Element *Property*"

f) (120 + 147) + 250 = 120 + (147 + 250) "Associative *Property*"

2 **Complete the following and write the addition property used:**

a) 5 + 3 = 3 + 5 "Commutative Property"

b) 28 + 17 = 17 + 28 "Commutative Property"

c) 5 + 0 = 5 "Identity Element Property"

d) 0 + 215 = 215 "Identity Element Property"

e) (8 + 3) + 4 = 8 + (3 + 4) "Associative Property"

f) (25 + 35) + 40 + 20 = 25 + (35 + 40) + 20

"Associative Property"

3 **Complete to find the sum. Then, name the property used:**

a) 12 + 36 + 88 = 12 + 88 + 36 "commutative Property"

= (12 + 88) + 36 "Associative Property"

= 100 + 36 = 136

b) 10 + 25 + 45 + 75

= 10 + 45 + 25 + 75 "commutative Property"

= (10 + 45) + (25 + 75) "Associative Property"

= 55 + 100 = 155

c) 15 + 0 + 25 = (15 + 0) + 25 "Associative Property"

= 15 + 25 = 40 "Identity Property"

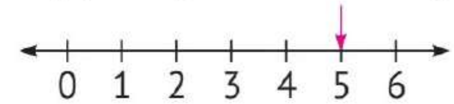
Properties of Subtraction

First: Identity Element Property:

- To subtract: 5 – 0

(By using the number line)

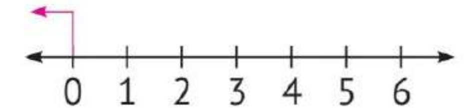
5 – 0 = 5



- To subtract: 0 – 5

(By using the number line)

0 – 5 is less than zero.



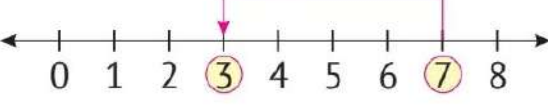
Therefore, Identity Element Property is not applicable on subtraction.
"Subtraction has no identity."

Second: Commutative Property:

- To subtract: 7 – 4

(By using the number line)

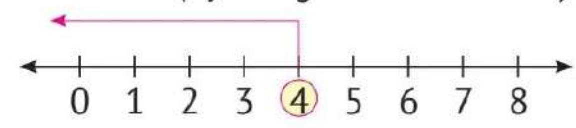
7 – 4 = 3



- To subtract: 4 – 7

(By using the number line)

4 – 7 is less than zero.



7 – 4 ≠ 4 – 7

Therefore, Commutative Property is not applicable on subtraction.

Third: Associative Property:

- To subtract: 9 – 6 – 3
- Subtraction can be done using parentheses, as follows:

$(9 - 6) - 3 = 3 - 3 = 0$ or $9 - (6 - 3) = 9 - 3 = 6$

So, $(9 - 6) - 3 \neq 9 - (6 - 3)$

Therefore, Associative Property is not applicable on subtraction.

/ 10

1 Complete using (Additive Identity – Commutative – Associative):

a) (5 + 6) + 3 = 6 + (5 + 3) "......Associative...... Property"

b) 85 + 5 = 5 + 85 "......Commutative...... Property"

c) 8,152 + 0 = 8,152 "...Additive identity.. Property"

2 Choose the correct answer:

a) 76 + 24 = ...24...... + 76 (100 or 76 or 24 or 52)

b) 45 + ...0...... = 45 (90 or 0 or 100 , or 10)

c) 7 + (6 + 4) = (7 + 6) + ...4...... (7 or 6 or 4 or 10)

3 Complete to find the sum. Then, write the property you used:

a) 78 + 45 + 22 = 78 + ...22...... + 45 "......Commutative...... Property"

= (...78... + ...22...) + ...45... "......Associative...... Property"

= ......100...... + ...45...... = ...145......

b) 5 + 7 + 8 + 3 = 5 + 8 + ...7... + ...3... "......Commutative...... Property"

= (...5... + ...8...) + (...7... + ...3...)

"......Associative...... Property"

= ......13...... + ...10...... = ...23......

Lesson 2 Addition with Regrouping

Learn

- To add two numbers, we start by adding the **Ones**, then the **Tens**, then the **Hundreds**, and **so on** in order.
- Sometimes we need to **regroup** (rename).

Ex. Add:

a) 543,267 + 189,452 = **732,719** (Horizontally)

Vertically:

$$\begin{array}{r} 543{,}267 \\ +\ 189{,}452 \\ \hline \mathbf{732{,}719} \end{array}$$

Sum

b) 125,468 + 876,536 = **1,002,004** (Horizontally)

Vertically:

$$\begin{array}{r} 125{,}468 \\ +\ 876{,}536 \\ \hline \mathbf{1{,}002{,}004} \end{array}$$

Sum

c) 9,999,999 + 1 = **10,000,000** (Horizontally)

Vertically:

$$\begin{array}{r} 9{,}999{,}999 \\ +\ 1 \\ \hline \mathbf{10{,}000{,}000} \end{array}$$

Sum

1 Find the result of each of the following:

ⓐ 52,765 + 37,135 = 89,900

ⓑ 8,675,568 + 354,722 = 9,030,290

ⓒ 7,782,056 + 2,217,944 = 10,000,000

ⓓ 4,836 + 6,274 = 11,110

ⓔ 999,999 + 6 = 1,000,005

ⓕ 963,452,793 + 47,058,207 = 1,010,511,000

Using the Rounding Strategy to Estimate the Sum

4,528 + 3,834 = 8,362

- By **rounding** the two numbers to the nearest **10**: 4,530 + 3,830 = 8,360
- By **rounding** the two numbers to the nearest **100**: 4,500 + 3,800 = 8,300
- By **rounding** the two numbers to the nearest **1,000**: 5,000 + 4,000 = 9,000

Looking at the sum in each case, we find that the closest estimate to the actual sum is to the nearest Ten.

2 Complete the following table:

Determine which of the estimates is closest to the actual sum and tick it.

	Problem	To the Nearest 10	To the Nearest 100	To the Nearest 1,000
ⓐ	7,684 + 6,418	7,680 + 6,420	7,700 + 6,400	8,000 + 6,000
	14,102	14,100 (✓)	14,100 (✓)	14,000 (✗)

	Problem	To the Nearest 10	To the Nearest 100	To the Nearest 1,000
b	2,589 + 7,283	2,590 + 7,280	2,600 + 7,300	3,000 + 7,000
	9,872	9,870 (✓)	9,900 (✗)	10,000 (✗)

3 An ant colony goes on a walk through the woods in search of food. On this journey, the ants form two bridges; the first bridge consists of 142 ants, and the second bridge consists of 165 ants. What is the number of ants required for both bridges?
Explain your steps, then check the reasonableness of your answer.

Estimate using one of the **rounding rules**:

Estimation: 140 + 170 = 310.

Actual Answer:

Actual Answer: 142 + 165 = 307. (Reasonable)

4 Ehab and Abeer are traveling from Aswan to Alexandria. They will travel 383 km on the first day to Assiut. On the second day, they will travel 462 km from Assiut to Alexandria.
How many kilometers will they travel in the two days?

Estimate using one of the **rounding rules**:

Estimation: 400 + 500 = 900.

Actual Answer:

Actual Answer: 383 + 462 = 845.

5 The speed of the fighter plane reaches 2,420 kilometers per hour. If it moves for two hours at this speed, how far will it travel?

Estimate using one of the **rounding rules**:

Estimation: 2,000 + 2,000 = 4,000.

Actual Answer:

Actual Answer: 2,420 + 2,420 = 4,840.

—— / 10

1 Find the result:

a) 68,102 + 12,498 = 80,600

b) 75,025 + 25,975 = 101,000

c) 457 + 237 + 146 = 840

2 Choose the correct answer:

a) 2,563 + 5,384 = 7,000 + 947 (70 or 700 or 7,000 or 70,000)

b) 451 + 924 = 1,247 + 128 (< or = or >)

c) 6,282 + 7,789 = 14,000 + 71
(14 + 71 or 140 + 71 or 1,400 + 71 or 14,000 + 71)

3 Noha bought a TV for 13,450 pounds and a fan for 1,690 pounds. How much money did she pay?

13,450 + 1,690 = 15,140 pounds

4 Estimate using rounding to the nearest 100:

45,963 + 20,449 → (46,000 + 20,400 = 66,400)

Subtraction with Regrouping

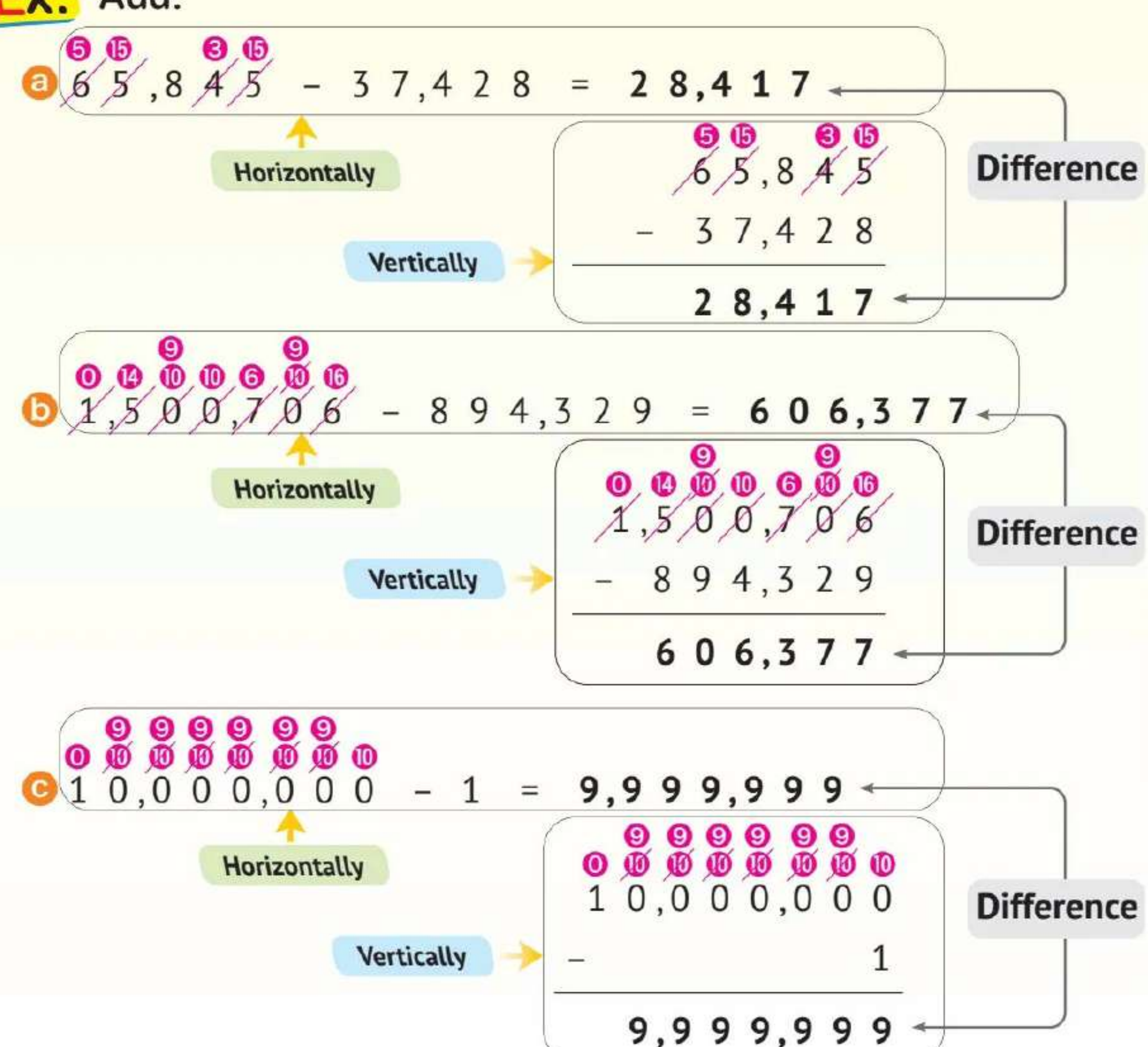
Remember

8 – 3 = 5

Minuend, Subtrahend, Difference

- To subtract two numbers, we start by subtracting the **Ones**, then the **Tens**, then the **Hundreds**, and **so on** in order.
- Sometimes we need to **regroup** (rename).

Ex. **Add:**



1 **Find the result of each of the following:**

ⓐ 78,356 − 59,173 = 19,183

ⓑ 2,109,539 − 1,173,289 = 936,250

ⓒ 6,005,320 − 1,852,275 = 4,153,045

ⓓ 88,000 − 56,758 = 31,242

ⓔ 1,000,000 − 999,995 = 5

ⓕ 654,209,027 − 123,372,576 = 530,836,451

Using the Rounding Strategy to Estimate the Difference

6,949 − 2,476 = 4,473

- By **rounding** the two numbers to the nearest **10**: 6,950 − 2,480 = 4,470
- By **rounding** the two numbers to the nearest **100**: 6,900 − 2,500 = 4,400
- By **rounding** the two numbers to the nearest **1,000**: 7,000 − 2,000 = 5,000

Looking at the difference in each case, we find that the closest estimate to the actual difference is to the nearest ten.

2 **Complete the following table:**

Determine which of the estimates is closest to the actual difference and tick it.

	Problem	To the Nearest 10	To the Nearest 100	To the Nearest 1,000
ⓐ	56,064 − 42,765	56,060 − 42,770	56,100 − 42,800	56,000 − 43,000
	13,299	13,290 (✓)	13,300 (✗)	13,000 (✗)

	Problem	To the Nearest 10	To the Nearest 100	To the Nearest 1,000
b	45,012 − 35,959	45,010 − 35,960	45,000 − 36,000	45,000 − 36,000
	9,053	9,050 (✓)	9,000 (✗)	9,000 (✗)

3 – It takes 15,422,140 ants to carry an adult of 77 kg. An average 10-year-old child weighing 32 kg requires 6,350,300 ants. How many ants are needed to carry an adult minus a 10-year-old child?

15,422,140 – 6,350,300 = 9,071,840 ants

– Round each number to the nearest Million, then solve the question again.

15,000,000 – 6,000,000 = 9,000,000 ants

4 An ant colony contains 255,000 ants; and another colony contains 6,200 ants. What is the difference between the number of ants in the two colonies?

255,000 – 6,200 = 248,800 ants

5 An ant wanted to cross a river that was 3,548 cm wide.
The ant had already swam 1,672 cm.
What is the remaining distance that the ant should swim?

3,548 – 1,672 = 1,876 cm

6 There are two colonies of ants; the first colony has about 1,267 ants, and the second colony has 3,452 ants.
How many more ants are there in the second colony than in the first colony?

3,452 – 1,267 = 2,185 ants

/ 10

1 Find the result:

ⓐ 98,025 – 15,927 = 82,098

ⓑ 200,500 – 125,355 = 75,145

ⓒ 10,000,000 – 999,999 = 9,000,001

2 Choose the correct answer:

ⓐ 87,754 – 26,854 = 71,900 – 11,000
(60,900 or 61,900 or **71,900** or 60,000)

ⓑ 701 – 324 < 640 – 115
(**<** or = or >)

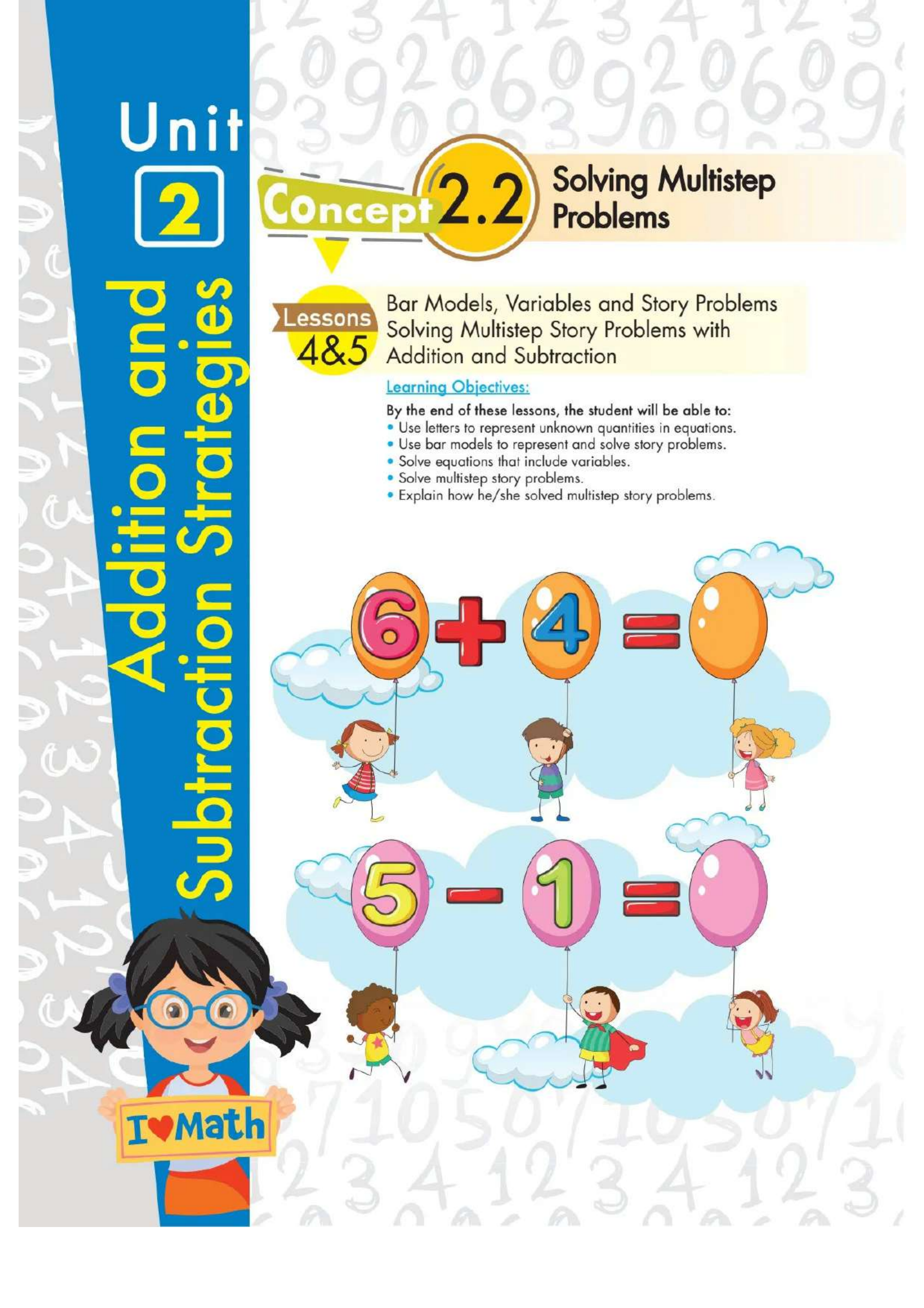
ⓒ 40,000 – 999 = 39,000 + 1
(39 + 1 or 390 + 1 or 3,900 + 1 or **39,000 + 1**)

3 Alaa had 15,620. She bought a PC for 7,550 pounds.
How much money was left with her?

15,620 – 7,550 = 8,070 pounds

4 Estimate using rounding to the nearest 10, then subtract:

18,884 – 9,498 → (18,880 – 9,500 = 9,380)



Concept 2.2 Solving Multistep Problems

Lessons 4&5

Bar Models, Variables and Story Problems
Solving Multistep Story Problems with Addition and Subtraction

Learning Objectives:

By the end of these lessons, the student will be able to:

- Use letters to represent unknown quantities in equations.
- Use bar models to represent and solve story problems.
- Solve equations that include variables.
- Solve multistep story problems.
- Explain how he/she solved multistep story problems.

Bar Models, Variables and Story Problems Solving Multistep Story Problems with Addition and Subtraction

Learn

Bar Model: (Part-Part-Whole)

- It is a diagram that represents the relationship between the **whole** and the **part**.

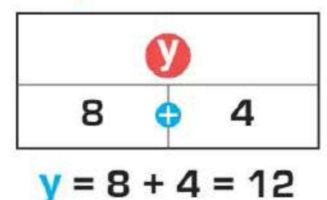
Whole = Part 1 + Part 2	Whole: Part 1 + Part 2
Part 1 = Whole − Part 2	Whole − Part 2 → Part 1
Part 2 = Whole − Part 1	Whole − Part 1 → Part 2

Equation:

- It is a **mathematical formula** in which we symbolize the **unknown number** with **one of the letters** (such as: x, y, a, ... etc).
- It is called a **variable** because its value is not fixed and changes from one question to another.

$x + 3 = 9 \qquad 25 - y = 10$

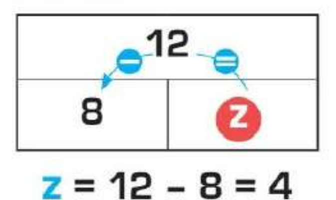
Important Notes: From the following bar models, we conclude that:



$y = 8 + 4 = 12$

12 − 4 → x

$x = 12 - 4 = 8$



$z = 12 - 8 = 4$

Bar Model	نموذج شريطي	Variable	مُتَغير	Equation	معادلة

Ex.

Create a bar model to solve the following equation:

$250 - x = 80$

Solution: $x = 250 - 80$

$x = 170$

Bar Model

250	
80	x

1 Create bar models to solve the following equations:

ⓐ $7{,}120 - x = 5{,}200$

Bar Model

7,120	
x	5,200

Solution: $x = 7{,}120 - 5{,}200$

$x = 1{,}920$

ⓑ $y - 22{,}120 = 18{,}850$

Bar Model

y	
22,120	18,850

Solution: $y = 22{,}120 + 18{,}850$

$y = 40{,}970$

ⓒ $812 + z = 6{,}000$

Bar Model

6,000	
812	z

Solution: $z = 6{,}000 - 812$

$z = 5{,}188$

ⓓ $w + 4{,}455 = 7{,}600$

Bar Model

7,600	
w	4,455

Solution: $w = 7{,}600 - 4{,}455$

$w = 3{,}145$

Variables and Story Problems

Steps for solving story problems with a variable:

1. Identify the parts, the whole, and the unknowns.
2. Draw a bar model and put the information you got into, then use a variable to express the unknown.
3. Write an equation using the bar model.
4. Find the value of the variable (solve the equation).

There are 45 students in your class, 15 of them were absent on one day. How many students are present on that day?

Solution:

$15 + x = 45$

$x = 45 - 15 = 30$

45	
15	x

The whole is: 45
One part is: 15 (Absent)
Second part is: Unknown

2 Read the following story problems. Create a bar model and an equation for each problem, then find the solution.

a) Ahmed had 8,500 pounds, from which he bought a television set for 6,250 pounds. How much money does Ahmed have left?

Equation: $x = 8,500 - 6,250$.

Solution: $x = 2,250$.

Bar Model

8,500	
x	6,250

b) A primary school has 2,050 students. 985 of them are girls. How many boys are in this school?

Equation: $x = 2,050 - 985$.

Solution: $x = 1,065$.

Bar Model

2,050	
x	985

c) A poultry farm had 4,200 chickens. 3,350 chickens were sold in a week. How many chickens are left in the farm?

Equation: $y = 4,200 - 3,350$.

Solution: $y = 850$.

Bar Model

4,200	
y	3,350

d) Ahmed bought a car for 90,950 pounds and a house for his family for 750,500 pounds. How much money did Ahmed spend to buy the car and the house?

Equation: $a = 90,950 + 750,500$.

Solution: $a = 841,450$.

Bar Model

a	
90,950	750,500

Steps for solving story problems:

1. Circle the important numbers and data.
2. Underline the questions.
3. Draw a square around the solution keys.
4. Check the following information:
   - What is known?
   - What is unknown?
   - What is the hidden question?
5. Use the knowns to answer the hidden question.
6. Use the new information to solve the problem and find the unknown.

Ex.

Nada has 7,245 piasters, and Ahmed has 9,372 piasters. What is the sum of what Nada and Ahmed have together.

- **Known:** Ahmed's, Nada's
- **Unknown:** The sum
- **Hidden question:** Add the two numbers.

Ex.

Alaa went to a clothing store and bought a shirt for 260 pounds, pants for 430 pounds, and shoes for 330 pounds. If Alaa had 1,300 pounds, how much money would he have left?

Solution:

Alaa paid = 260 + 430 + 330

= 1,020 pounds.

The amount left with him

= 1,300 – 1,020 = 280 pounds.

Information:

- Purchases:
  - Shirt for 260 LE.
  - Pants for 430 LE.
  - Shoes for 330 LE.
- Alaa had an amount of 1,300 LE.
- Unknown: The remaining amount with Alaa.
- Hidden question: What is the total money of what Alaa paid?

or

What is the value of the purchases that Alaa bought altogether?

3 The length of the Nile River is about 6,853 kilometers. Karim and his family are traveling across the Nile from one side to the other. If they traveled 1,075 kilometers in January, then 1,120 kilometers in February, and then 1,325 kilometers in March, how many kilometers are left for them to travel to reach the other side?

Solution:

1,075 + 1,120 + 1,325 = 3,520

6,853 – 3,520 = 3,333

4 The Great Pyramids had 59,000 visitors on Monday, 27,525 visitors on Tuesday, and 32,975 visitors on Wednesday. The number of visitors is expected to be 150,000 from Monday to Thursday. How many visitors have to come on Thursday to reach that number?

Solution:

59,000 + 27,525 + 32,975 = 119,500

150,000 – 119,500 = 30,500

5 Mansoura has a population of 420,195. The population of Helwan is 320,000 and the population of New Cairo is 200,000. How many more people do Helwan and New Cairo together than Mansoura?

Solution:

320,000 + 200,000 = 520,000

520,000 – 420,195 = 99,805

10

1 Solve the following equations. Create a bar model to solve:

ⓐ 14,000 − n = 6,000

14,000	
n	6,000

Solution: n = 8,000

ⓑ 502 + c = 922

922	
c	502

Solution: c = 420

ⓒ m − 24 = 50

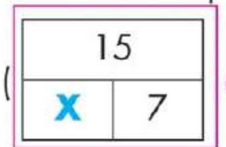
m	
24	50

Solution: m = 74

2 Choose the correct answer:

ⓐ If X −25 = 40, then X = 65 . (65 or 25 or 15 or 100)

ⓑ The bar model that represents the equation "15 − X = 7" is ....



(15 / X, 7 or X / 15, 7 or X / 7, 15 or 8 / 7, X)

ⓒ The equation that represents the following bar model is 20 + m = 40

(m = 20 + 40 or 20 + m = 40 or 20 − m = 40 or 20 X m = 40)

40	
20	m

3 Eman had 900 pounds. She spent 650 pounds.

How much money was left with her? (Use a bar model.)

Equation: 900 − x = 650 .

Solution: x = 900 − 650 = 250 pounds .

Metric Measurement

Measuring Length

Learning Objectives:

By the end of this lesson, the student will be able to:
- Explain the relationship between metric units of length.
- Convert between metric units of length.

Measuring Mass

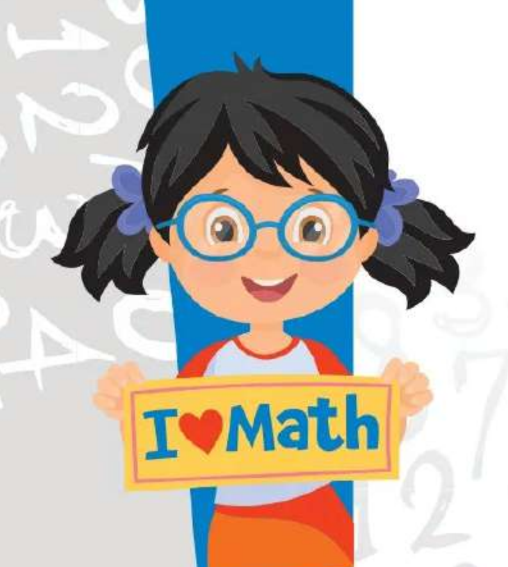
Learning Objectives:

By the end of this lesson, the student will be able to:
- Explain the relationship between metric units of mass.
- Convert between metric units of mass.

Units of Measuring Capacity

Learning Objectives:

By the end of this lesson, the student will be able to:
- Explain the relationship between metric units of capacity.
- Convert between metric units of capacity.



Theme 1

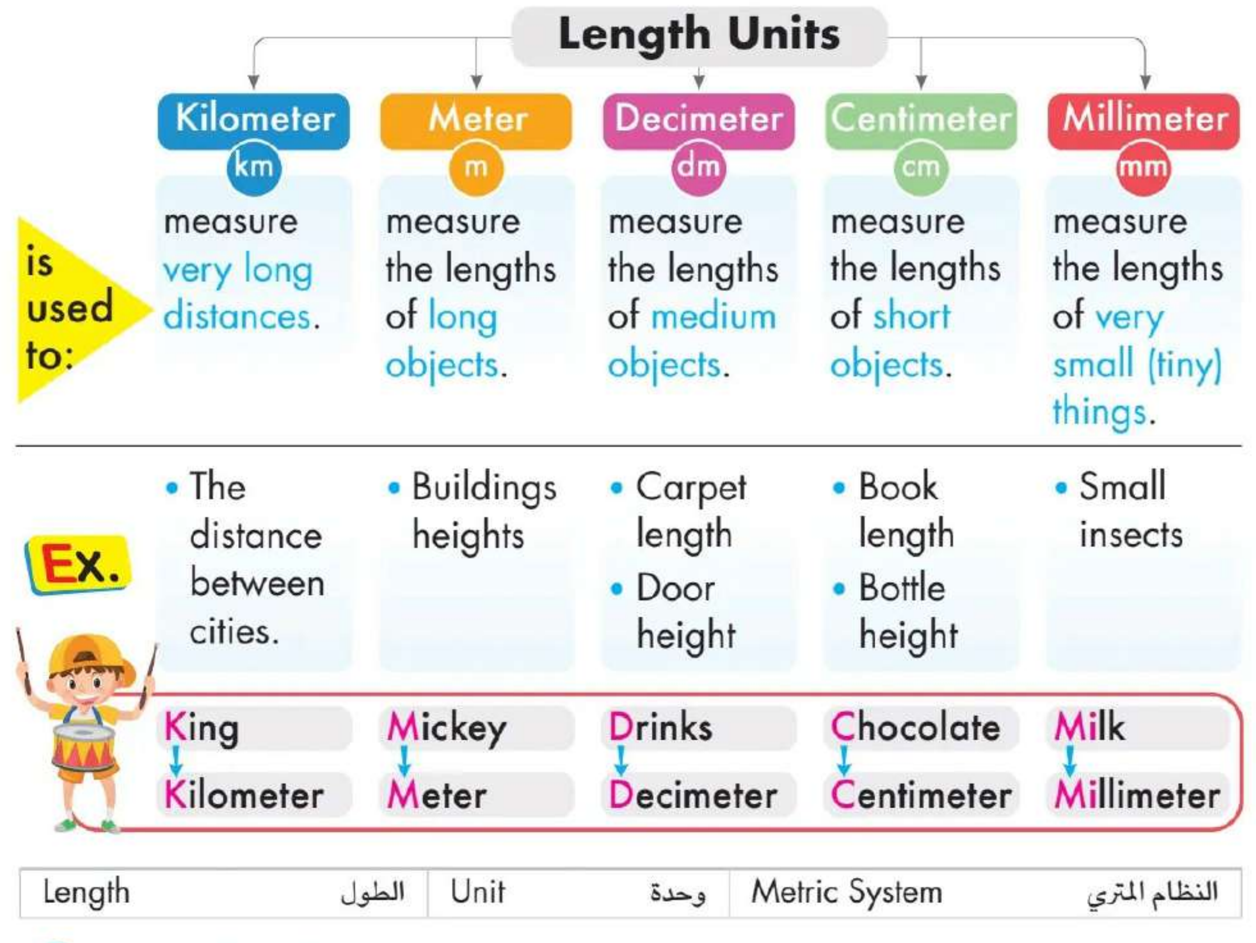
Lesson 1 Measuring Length

Metric System of Measurement

Learn (Meter, Kilogram, Second)

This system depends on the following units as a basis for measurement:

- A meter is the unit used to measure length; a kilogram is the unit used to measure weight; a second is the unit used to measure time; and a liter is the unit used to measure capacity.

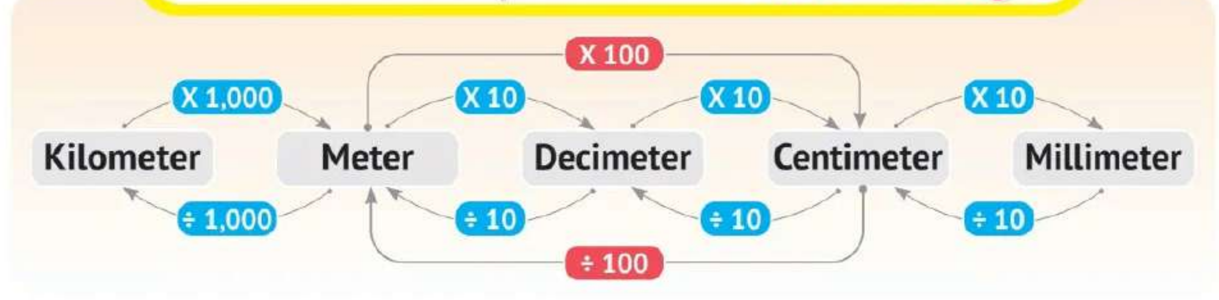


Length Units

	Kilometer (km)	Meter (m)	Decimeter (dm)	Centimeter (cm)	Millimeter (mm)
is used to:	measure very long distances.	measure the lengths of long objects.	measure the lengths of medium objects.	measure the lengths of short objects.	measure the lengths of very small (tiny) things.
Ex.	• The distance between cities.	• Buildings heights	• Carpet length • Door height	• Book length • Bottle height	• Small insects
	King → Kilometer	Mickey → Meter	Drinks → Decimeter	Chocolate → Centimeter	Milk → Millimeter

Length	الطول	Unit	وحدة	Metric System	النظام المتري

The Relationship Between Units of Length



From the previous, we find that:

- 1 kilometer = 1,000 meters
- 1 meter = 10 decimeters • 1 meter = 100 centimeters • 1 meter = 1,000 millimeters
- 1 decimeter = 10 centimeters • 1 decimeter = 100 millimeters
- 1 centimeter = 10 millimeters

1 Choose the best unit for measuring each of the following:

a) A child's height (Kilometer, Meter, Centimeter, Millimeter)

b) The distance between your house and the club. (Kilometer, Meter, Centimeter, Millimeter)

c) The length of an insect. (Kilometer, Meter, Centimeter, Millimeter)

d) The distance between Cairo and Alexandria. (Kilometer, Meter, Centimeter, Millimeter)

e) The height of a school bulding. (Kilometer, Meter, Centimeter, Millimeter)

2 Complete each of the following tables:

a)

Kilometer	Meter
5	5,000
6	6,000
20	20,000
35	35,000

b)

Meter	Centimeter
2	200
9	900
30	3,000
400	40,000

c)

Centimeter	Millimeter
9	90
5	50
70	700
60	600

Theme 1

Ex.

125 cm	
1 m	25 cm

2,360 cm	
23 m	60 cm

6,820 m	
6 km	820 m

20,290 m	
20 km	290 m

3 **Complete the bar models to convert between length units, as in the example:**

ⓐ

840 cm	
8 m	40 cm

ⓑ

5,020 cm	
50 m	20 cm

ⓒ

7,070 m	
7 km	70 m

ⓓ

15,120 m	
15 km	120 m

ⓔ

372 cm	
3 m	72 cm

ⓕ

1,005 cm	
10 m	5 cm

ⓖ

9,300 m	
9 km	300 m

ⓗ

70,020 m	
70 km	20 m

4 **Complete each of the following:**

ⓐ 54 m = 5,400 cm
ⓑ 230 m = 23,000 cm
ⓒ 23 km = 23,000 m
ⓓ 600 km = 600,000 m
ⓔ 700,000 cm = 7,000 m
ⓕ 86,000 cm = 860 m
ⓖ 9,000,000 m = 9,000 km
ⓗ 430,000 m = 430 km

5 **Complete each of the following:**

ⓐ 6 m + 25 cm = 625 cm
ⓑ 90 m + 32 cm = 9,032 cm
ⓒ 4 km + 138 m = 4,138 m
ⓓ 14 km + 225 m = 14,225 m
ⓔ 425 cm = 4 m + 25 cm
ⓕ 2,003 cm = 20 m + 3 cm
ⓖ 7,529 m = 7 km + 529 m
ⓗ 90,050 cm = 900 m + 50 cm

6 **If the length of one bee is about 1 cm, how long is a row of 100,000 bees?**

Row length = 100,000 cm = 1,000 m = 1 km

7 **Ahmed is 150 cm tall. How tall is Ahmed in decimeters and millimeters?**

150 cm = 15 dm = 1,500 mm

8 **Sameh practices walking. Usually, he walks 50 meters per minute.**

– How many minutes does Sameh need to walk 500 meters?

500 ÷ 50 = 10 minutes.

– What is the distance that Sameh walks in half an hour?

50 × 30 = 1,500 m

9 **Sameh and Rana practice walking. If Sameh walked a distance of 5 km and Rana walked a distance of 7 km.**
Who walked for the longest distance?
Calculate the difference between the two distances in meters.

7,000 – 5,000 = 2,000 m

10

1 Complete:

a) 42 km = 42,000 m   b) 20,000 cm = 200 m

c) 50,020 km = 50 km + 20 m

d) 21 m + 9 cm = 2,109 cm

2 Choose the best unit of length to measure:
(Kilometer, Meter, Centimeter, or Millimeter):

a) The height of a tree (Meter)

b) The distance between two cities (Kilometer)

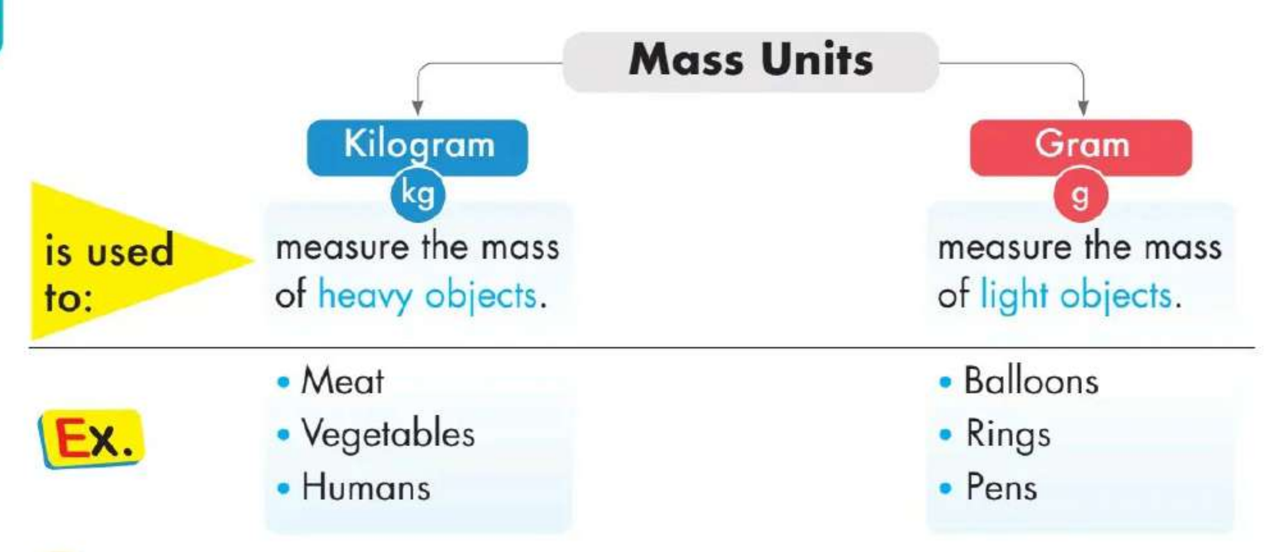
c) The height of a man (Centimeter)

d) The length of an ant (Millimeter)

3 The distance between Nada's house and her club is 3 km.
What is the distance in meters, decimeters, and centimeters?

3 km = 3,000 m = 30,000 dm = 300,000 cm

Measuring Mass

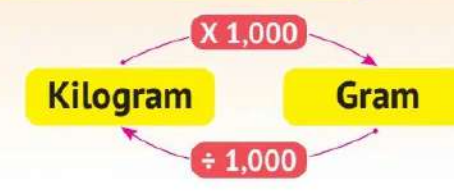


1 **Choose the best mass unit for each of the following:**

- ⓐ The mass of a **child** (Kilogram, Gram)
- ⓑ The mass of a **ring** (Kilogram, Gram)
- ⓒ The mass of a **pencil** (Kilogram, Gram)
- ⓓ The mass of a **dog** (Kilogram, Gram)

The Relationship Between Units of Mass

1 kilogram = 1,000 grams



2 **Complete each of the following tables:**

ⓐ

Gram	Kilogram
2,000	2
15,000	15
61,000	61

ⓑ

Gram	Kilogram
9,000	9
5,000	5
12,000	12

Mass	كتلة	Weight	وزن

3 Complete the bar models to convert between mass units, as in the example:

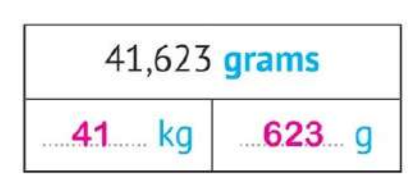
Ex.

60,030 grams	
60 kg	30 g

8,235 g	
8 kg	235 g

ⓐ

9,105 g	
9 kg	105 g



ⓑ

32,008 grams	
32 kg	8 g

ⓒ

8,235 g	
8 kg	235 g

ⓓ

41,623 grams	
41 kg	623 g

4 Complete each of the following:

ⓐ 6 **kilograms** = 6,000 **grams**

ⓑ 200 **kilograms** = 200,000 **grams**

ⓒ 90,000 **grams** = 90 **kilograms**

ⓓ 200,000 **grams** = 200 **kilograms**

ⓔ 3,624 **g** = 3 **kg** + 624 **g**

ⓕ 67,026 **g** = 67 **kg** + 26 **g**

ⓖ 5 **kg** + 583 **g** = 5,583 **g**

ⓗ 50 **kg** + 9 **g** = 50,009 **g**

5 If Shaimaa's weight is 45 kilograms and 200 grams, rewrite the weight in grams.

45,200 gram.

6 Adam bought 5 kilograms and 500 grams of oranges. Then, he bought 7 kilograms of oranges. Rewrite these weights in grams, then find the total weight of what Adam bought.

5 kg = 5,000 g , 7 kg = 7,000 g.

The sum = 5,000 + 500 + 7,000 = 12,500 g.

Quiz

10

1 Complete:

ⓐ 42 kg = 42,000 g

ⓑ 50,000 g = 50 kg

ⓒ 10,070 g = 10 kg + 70 g

2 Choose the correct answer:

ⓐ The best unit to measure the mass of a human is kilogram .

(kilogram or gram or kilometer or liter)

ⓑ 30 kg, 5 g = 30,005 g (35 or 305 or 3,005 or 30,005)

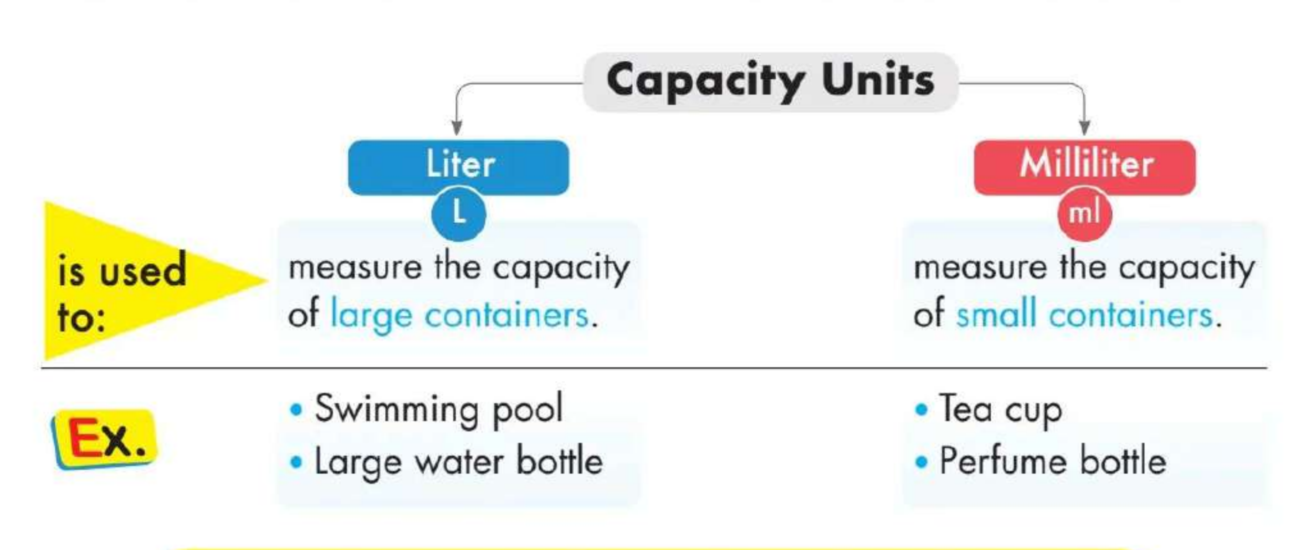
ⓒ 45 kg > 4 kg + 500 g (< or = or >)

3 The weight of Ahmed's cat is 5 kg and 300 grams, and the weight of Ola's dog is 8 kg and 700 grams. What is the difference between the weights of the two pets?

8,700 – 5,300 = 3,400 g

Units of Capacity

Capacity is the amount of liquid that can be put into a container until it is full.



The Relationship Between Units of Capacity

1 liter = 1,000 milliliters

Liter → Milliliter: X 1,000

Milliliter → Liter: ÷ 1,000

1 Complete the following tables:

ⓐ

Liter	Milliliter
50	50,000
200	200,000
520,000	520,000,000

ⓑ

Milliliter	Liter
8,000	8
7,000	7
18,000	18

Volume حجم	Capacity سِعة

2 Complete the bar models to convert between capacity units, as in the example:

Ex.

20,008 milliliters	
20 L	8 mL

7,302 milliliters	
7 L	302 mL

a

35,020 mL	
35 L	20 mL

b

9,252 mL	
9 L	252 mL

c

3,022 mL	
3 L	22 mL

d

200,200 mL	
200 L	200 mL

3 Complete each of the following:

a 8 liters + 2,547 milliliters = 10,547 mL

b 10 liters – 300 mL = 9,700 mL

c 15 L, 235 mL + 2 L, 20 mL = 17,255 mL

d 24 L, 150 mL – 4 L, 100 mL = 20,050 mL

4 Complete each of the following:

a 3 liters = 3,000 milliliters

b 50 liters = 50,000 milliliters

c 700,000 milliliters = 700 liters

d 15,000 milliliters = 15 liters

e 7,320 milliliters = 7 liters + 320 milliliters

f 30,025 milliliters = 30 liters + 25 milliliters

g 11 liters + 11 milliliters = 11,011 milliliters

h 10 liters + 2 milliliters = 10,002 milliliters

5 **The car's fuel tank is filled with 45 liters of gasoline. If the tank contains 30 liters and 250 milliliters,** how much gasoline do we need to fill the tank?

45 liters = **45,000** milliliters

30 liters, 250 milliliters = **30,250** milliliters

– Amount of gasoline = **45,000 – 30,250 = 14,750 milliliter**

6 **Islam has 2 liters and 500 milliliters of orange juice, and one liter and 250 milliliters of apple juice. What is the total amount of juice that Islam has?**

2 liters, 500 milliliters = **2,500** milliliters

1 liter, 250 milliliters = **1,250** milliliters

– Amount of juice = **2,500 + 1,250 = 3,750 milliliter**

7 **A bottle contains two liters of soda water. Adel drank 320 milliliters of it and Samah drank 250 milliliters. How much soda water is left in the bottle?**

– Use the following **bar model** to solve:

2 liters		
230 mL	250 mL	**1,520** mL

2 liters = **2,000** milliliters

– Amount of soda water left = **2,000 – (230 + 250)**

= 2,000 – 480 = 1,520 milliliter

10

1 Complete:

a) 20 L + 20 mL = **20,020** mL

b) 100,050 mL – 50 L , 40 mL = **50,010** mL

c) 41 L , 50 mL + 2 L , 210 mL = **43,260** mL

2 Choose the correct answer:

a) 50 L + 5 mL = **50,005** mL (55 or 505 or 5,005 or **50,005**)

b) 25,000 mL – 15,000 mL = **10** L (**10** or 100 or 1,000 or 10,000)

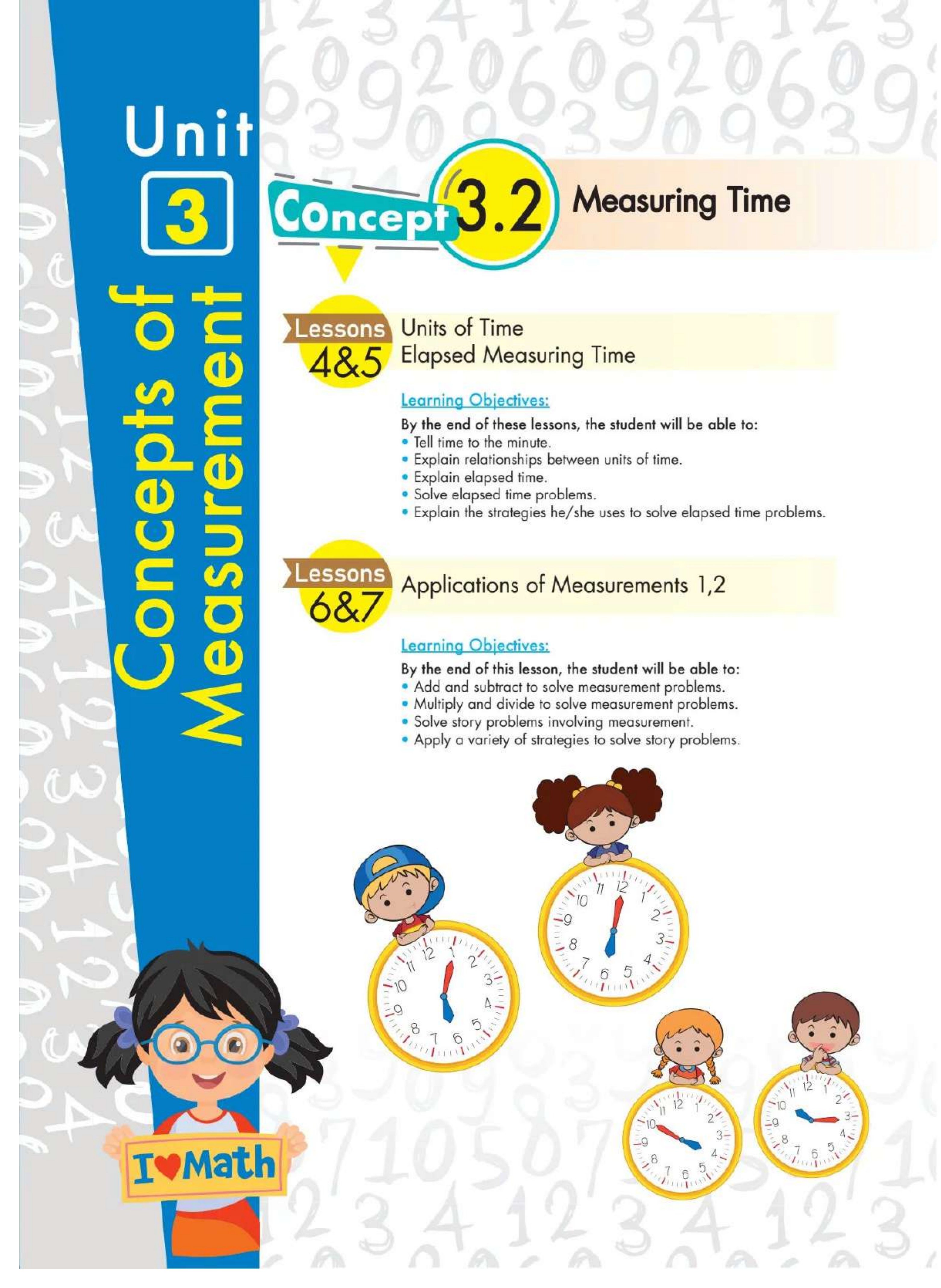
c) 24 L **>** 15 mL + 6,250 mL (< or = or **>**)

3 How many bottles are needed to distribute 2 liters of juice, if the capacity of one bottle is 200 millilitres?

2,000 ÷ 200 = 10 bottles

4 The capacity of a bottle of water is 6 liters. If the bottle holds 4 liters and 200 millilitres, how much more water is needed to fill the tank?

6,000 – 4,200 = 1,800 mL.



Concept 3.2 Measuring Time

Lessons 4&5

Units of Time
Elapsed Measuring Time

Learning Objectives:

By the end of these lessons, the student will be able to:

- Tell time to the minute.
- Explain relationships between units of time.
- Explain elapsed time.
- Solve elapsed time problems.
- Explain the strategies he/she uses to solve elapsed time problems.

Lessons 6&7

Applications of Measurements 1,2

Learning Objectives:

By the end of this lesson, the student will be able to:

- Add and subtract to solve measurement problems.
- Multiply and divide to solve measurement problems.
- Solve story problems involving measurement.
- Apply a variety of strategies to solve story problems.

Lessons 4&5 Units of Measuring Time Elapsed Time

Remember

Week ⇄ Day ⇄ Hour ⇄ Minute ⇄ Second

(Week → Day: X 7; Day → Week: ÷ 7)
(Day → Hour: X 24; Hour → Day: ÷ 24)
(Hour → Minute: X 60; Minute → Hour: ÷ 60)
(Minute → Second: X 60; Second → Minute: ÷ 60)

- 1 week = 7 days
- 1 day = 24 hours
- 1 hour = 60 minutes
- 1 minute = 60 seconds

Quarter of an hour
15 minutes

Half of an hour
30 minutes

3 quarters of an hour
45 minutes

It's ... o'clock — :00
It's 5 past ... — :05
It's 10 past ... — :10
It's quarter past ... — :15
It's 20 past ... — :20
It's 25 past ... — :25
It's half past ... — :30
It's 25 to ... — :35
It's 20 to ... — :40
It's quarter to ... — :45
It's 10 to ... — :50
It's 5 to ... — :55

PAST
TO

Week	أسبوع	Day	يوم	Hour	ساعة	Minute	دقيقة	Second	ثانية	Time	وقت

1 Complete the following:

a

4 : 00

4 O'clock

b

4 : 45

It's quqrter to 5

07:55

5 to 8

d

04:20

It's 20 past 4

4 : 30

It's half past 4.

f

4 : 50

It's 10 to 5.

3 : 05

It's 5 past 3.

h

1 : 15

It's quarter past 1.

2 Complete the following tables:

a (X 7)

Week	Day
1	7
3	21
5	35
7	49
9	63

b (X 24)

Day	Hour
1	24
4	96
6	144
8	192
10	240

c (X 60)

Hour	Minute
1	60
2	120
5	300
8	480
10	600

d (X 60)

Minute	Second
1	60
3	180
6	360
7	420
9	540

3 Solve the following conversion problems:

Ex. 3 **weeks** and 5 **days** = 21 days + 5 days = 26 **days**

ⓐ 2 **weeks** and 2 **days** = 14 + 2 = 16 **days**

ⓑ 7 **days** and 10 **hours** = 168 + 10 = 178 **hours**

ⓒ 3 **days** and 15 **hours** = 72 + 15 = 87 **hours**

ⓓ 2 **hours** and 10 **minutes** = 120 + 10 = 130 **minutes**

ⓔ 5 **hours** and 35 **minutes** = 300 + 35 = 335 **minutes**

ⓕ 10 **minutes** and 50 **seconds** = 600 + 50 = 650 **seconds**

ⓖ 5 **minutes** and 5 **seconds** = 300 + 5 = 305 **seconds**

4 Complete the following:

Ex. 20 **days** = (7 + 7 + 6) **days** = 2 **weeks** + 6 **days**

Week Week

ⓐ 45 **days** = 6 **weeks** + 3 **days**

ⓑ 50 **hours** = 2 **days** + 2 **hours**

ⓒ 130 **hours** = 5 **days** + 10 **hours**

ⓓ 150 **minutes** = 2 **hours** + 30 **minutes**

ⓔ 330 **minutes** = 5 **hours** + 30 **minutes**

ⓕ 90 **seconds** = 1 **minutes** + 30 **seconds**

ⓖ 605 **seconds** = 10 **minutes** + 5 **seconds**

5 **Emad traveled with his family on a trip to Luxor and Aswan. He spent 3 days in Luxor and 4 days in Aswan. How many hours did Emad spend on this trip?**

3 + 4 = 7 days = 168 hours.

6 **Salah swam in training for 3 hours on Thursday, 2 hours on Friday and 4 hours on Saturday. How many minutes did Salah spend in swimming training in the three days?**

3 + 2 + 4 = 9 hours = 540 minutes.

Adding and Subtracting Time:

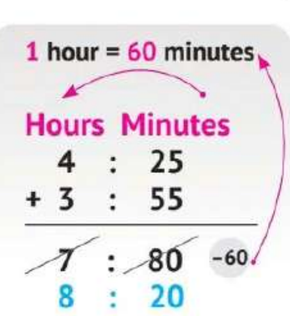
To add and subtract time, look at the following examples:

To add 4 hours and 25 minutes + 3 hours and 55 minutes,

we add: Minutes + Minutes

Hours + Hours

– In this example, when adding the minutes, we get 25 + 55 = 80 minutes. This is not acceptable because the **largest** number that can be written in the minutes field is **59 minutes**. As **60 minutes** is an hour.



So, we will regroup 60 minutes and add an hour to the total hours.

4 hours and 25 minutes + 3 hours and 55 minutes = 8 hours and 20 minutes

Or: 4 : 25 + 3 : 55 = ~~7 : 80~~ (+1) = 8 : 20

To subtract 9 hours and 20 minutes – 5 hours and 45 minutes,

we subtract : Minutes – Minutes

Hours – Hours

In this example, when subtracting 20 – 45, this is not acceptable. So, we must follow **subtraction by regrouping strategy**. We convert 1 hour from hours to 60 minutes, then the minutes become 80 minutes, then we can subtract.

1 hour = 60 minutes		
Hours		Minutes
8		80
~~9~~	:	~~20~~
– 5	:	45
3	:	35

9 hours and 20 minutes – 5 hours and 45 minutes = 3 hours and 35 minutes

7 Find the result of each of the following:

ⓐ

	Hours		Minutes
	6	:	34
+	2	:	26
	9:00		

ⓑ

	Hours		Minutes
	4	:	35
+	3	:	35
	8:10		

ⓒ

	Hours		Minutes
	9	:	25
−	2	:	43
	6:42		

ⓓ

	Hours		Minutes
	7	:	00
−	2	:	27
	4:33		

ⓔ 7 : 32 + 2 : 18 = **9:50**

ⓕ 9 : 12 − 2 : 45 = **6:27**

8 Khadija practices speed-ball for an hour and 25 minutes.

If she started training at 8:45, when will she finish her training?

8:45 + 1:25 = 9:70 = 10:10

9 Mahmoud travels from Cairo to Alexandria in a time of two hours and 45 minutes in his car. If he starts his journey from Cairo at 3:30, when will he reach Alexandria?

3:30 + 2:45 = 5:75 = 6:15

10 Jana and Maha have 5 hours to watch three movies.

The first movie is 1 hour and 22 minutes long, the second movie is 2 hours and 12 minutes long, and the third movie is 1 hour and 57 minutes long.

Do the two girls have enough time to watch the three movies?

(Show your steps)

1:22 + 2:12 + 1:57 = 4:91

= 5:31

"No, they don't have time"

/10

1 Complete:

a) One week and 2 days = ...9... days

b) 2 days and 3 hours = ...51... hours

c) 5 minutes and 5 seconds = ...305... seconds

d) 18 days = ...2... weeks and ...4... days

e) 30 hours = ...1... days and ...6... hours

f) 150 minutes = ...2... hours and ...30... minutes

2 Find the result of each of the following:

a)

	Hours		Minutes
	6	:	34
+	2	:	26
	9	:	00

b)

	Hours		Minutes
	5	:	05
–	3	:	35
	1	:	30

3 The movie started at 6:20 pm., and ended at 8:30. How long is the movie?

8:30 – 6:20 = 2:10

Applications of Measurements 1,2

Strategies for Solving Story Problems

1. Estimation
2. Drawing a picture or model (number line, bar model, chart, etc.)
3. Finding the hidden question
4. Converting the units of measurement first
5. Using smaller numbers
6. Using the standard algorithm
7. Writing an equation that includes the unknown values
8. Creating a number that has a distinct numerical value

1 Aya bought potatoes weighing 2 kg and 950 g. She bought onions that weighed 1,075 grams less than the potatoes. What is the weight of the potatoes and onions together?

Weight of potatoes and onions:

- 2,950 – 1,075 = 1,875 g
- 2,950 + 1,875 = 4,825 g

2 It takes 45 days for a pharaoh ant to grow from the egg stage to become an adult ant. It takes 12 weeks for a wood ant to grow from the egg stage to become an adult.
Which specie takes the longer time to grow from the egg stage to an adult ant? What is the time difference between them?

12 weeks = 84 days.

The difference = 84 – 45 = 39 days.

3 A fish tank has a capacity of 100 liters. 20,000 milliliters of water are poured into it. How many liters of water should be used to fill the tank completely?

20,000 mL = 20 L

100 – 20 = 80 L

4 Zina bought 8 kilograms of sugar, 10 kilograms of flour, 500 grams of cocoa, 225 grams of nuts, and 275 grams of coconut. What is the total mass of what Zina bought in kilograms?

8,000 + 10,000 + 500 + 225 + 275

= 19,000 g = 19 kg

5 Ahmed has a 12 meter long piece of wood. He wants to cut it into 3 equal pieces in length. How long should each piece be in meters? What is the length of each piece in centimeters?

12 ÷ 3 = 4 m = 400 cm

6 Ayman likes jogging. During training, Ayman needs to drink 500 milliliters of water 4 times per day.
How many liters of water will he drink in one week?

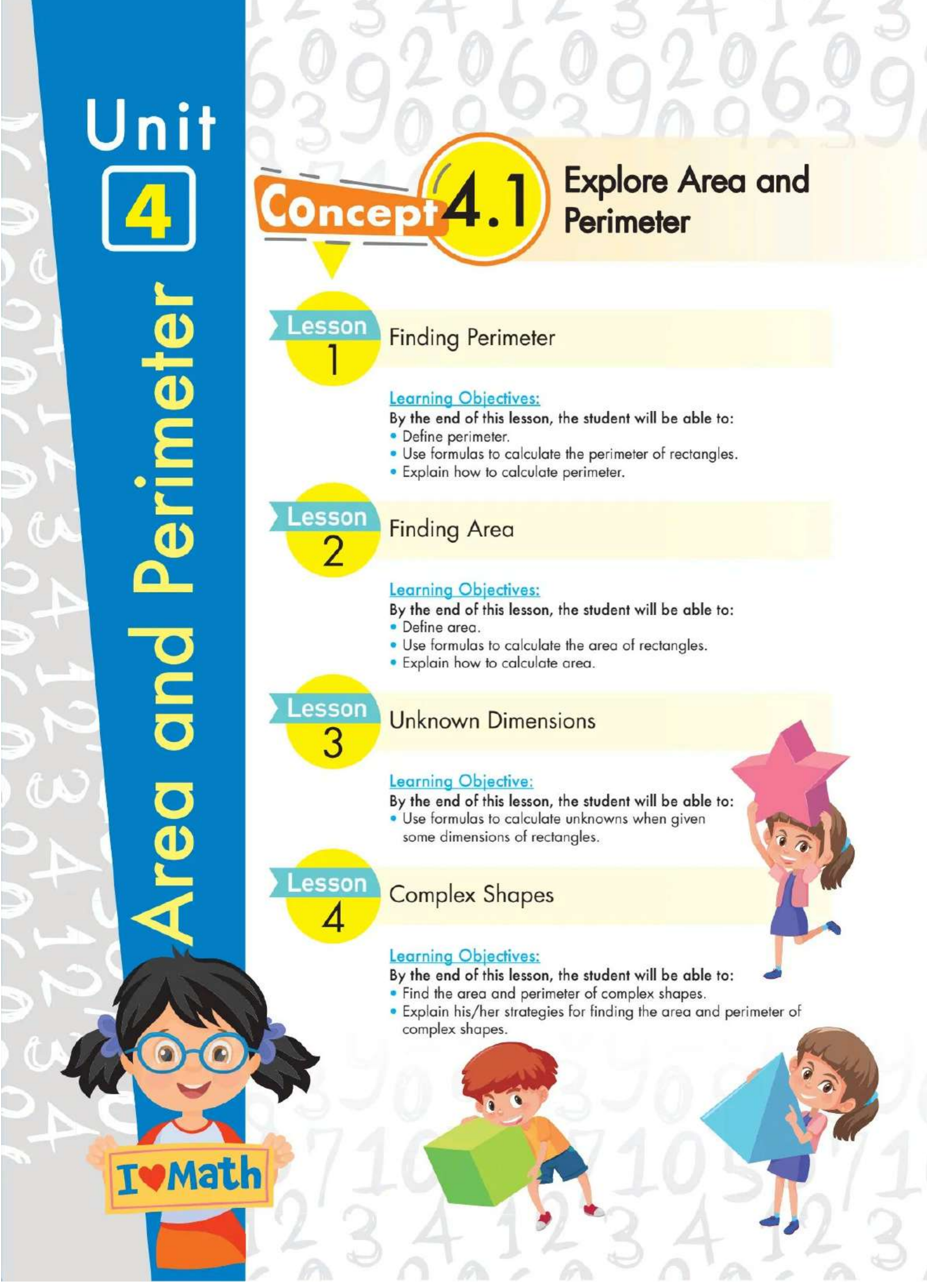
4 X 500 = 2,000 mL = 2 L

2 X 7 = 14 L

7 Ehab trains Weightlifting. His weight is 100 kilograms.
Ehab wants his weight to increase by 500 grams per week.
If this continues for 5 weeks, what will his weight be at the end?

5 X 500 = 2,500 g

100,000 + 2,500 = 102,500 g



Unit 4 Area and Perimeter

Concept 4.1 Explore Area and Perimeter

Lesson 1 Finding Perimeter

Learning Objectives:

By the end of this lesson, the student will be able to:

- Define perimeter.
- Use formulas to calculate the perimeter of rectangles.
- Explain how to calculate perimeter.

Lesson 2 Finding Area

Learning Objectives:

By the end of this lesson, the student will be able to:

- Define area.
- Use formulas to calculate the area of rectangles.
- Explain how to calculate area.

Lesson 3 Unknown Dimensions

Learning Objective:

By the end of this lesson, the student will be able to:

- Use formulas to calculate unknowns when given some dimensions of rectangles.

Lesson 4 Complex Shapes

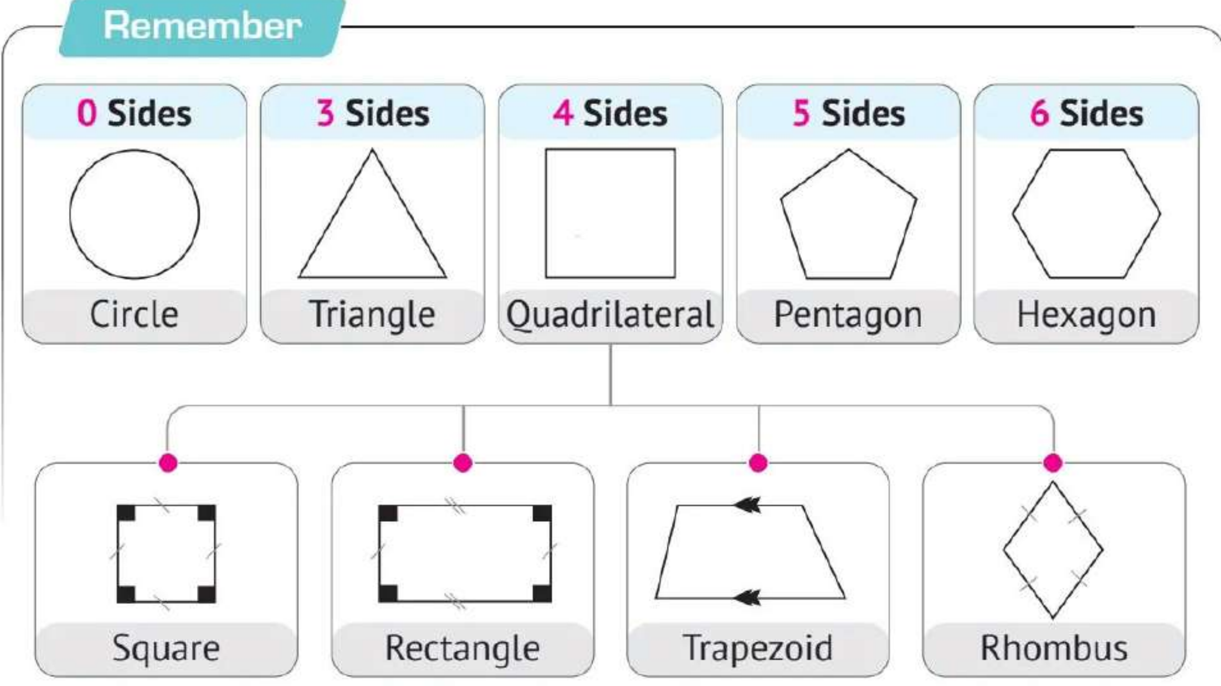
Learning Objectives:

By the end of this lesson, the student will be able to:

- Find the area and perimeter of complex shapes.
- Explain his/her strategies for finding the area and perimeter of complex shapes.

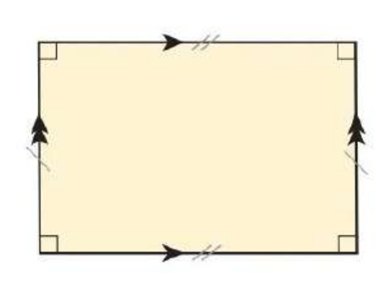
Finding Perimeter

Remember



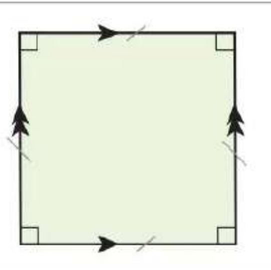
Rectangle

- It is a **quadrilateral** with **four sides** and **four angles**.
- Each two opposite sides are **equal** and **parallel**.
- Each of its corners (angles) is a **right angle** (90 degrees).



Square

- It is a type of **rectangles**.
- Its four sides are **equal**.



Perimeter	المحيط	Area	المساحة	Dimensions	الأبعاد	Angle	زاوية

Theme 1

Perimeter

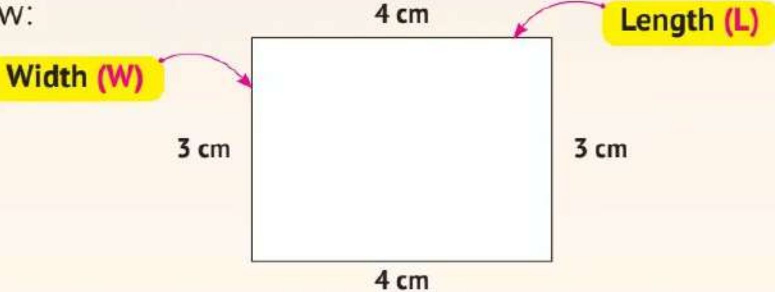
- The **perimeter** of a figure is the **sum of the lengths of its sides**.

Ex. The perimeter of the opposite figure
= 5 + 3 + 4 + 4 = 16 cm.

5 cm
4 cm
3 cm
4 cm

Perimeter of the Rectangle

- We can calculate the perimeter of the rectangle in one of the ways shown below:



First Formula

Perimeter of the rectangle
= Length + Width + Length + Width
= 4 + 3 + 4 + 3
= 14 cm

P = L + W + L + W

Second Formula

Perimeter of the rectangle
= (Length X 2) + (Width X 2)
= (4 X 2) + (3 X 2)
= 8 + 6 = 14 cm

P = L X 2 + W X 2

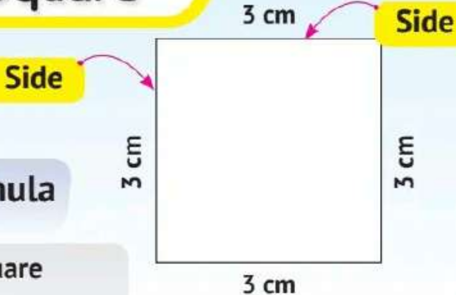
Third Formula

Perimeter of the rectangle
= (Length + Width) X 2
= (4 + 3) X 2
= 7 X 2 = 14 cm

P = (L + W) X 2

Perimeter of the Square

- We can calculate the perimeter of the square in one of the ways shown below:



First Formula

Perimeter of the square
= The sum of its sides lengths
= 3 + 3 + 3 + 3 = 12 cm.

P = S + S + S + S

Second Formula

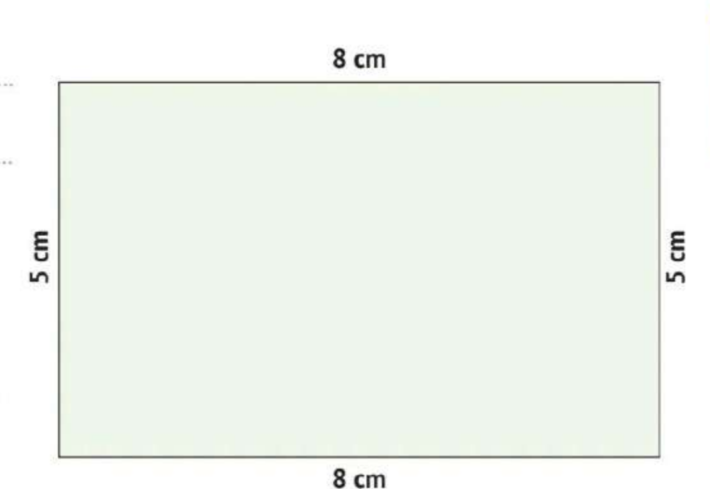
Perimeter of the square
= Side length (S) X 4
= 3 X 4 = 12 cm.

P = S X 4

Formula	قانون/قاعدة	Length (L)	طول	Width (W)	عرض	Side (S)	ضلع

1 Use **two different formulas** to find the **perimeter** of each shape.

Show your steps:



ⓐ First Formula = ...

....

8 + 5 + 8 + 5 = 26 cm

Second Formula = ...

....

(8 + 5) X 2 = 26 cm

ⓑ First Formula = ...

14 + 14 + 25 + 25 = 78 cm

....

Second Formula = ...

(14 + 25) X 2 = 78 cm

....

14 cm

25 cm 25 cm

14 cm

ⓒ First Formula = ...

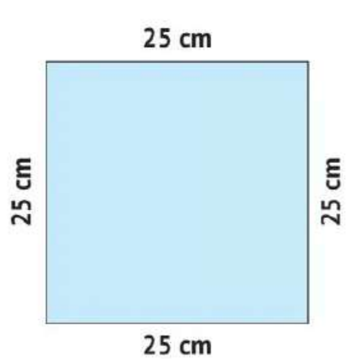
25 + 25 + 25 + 25 = 100 cm

....

Second Formula = ...

25 X 4 = 100 cm

....



2 **Solve the following perimeter problems. For each problem, draw a rectangle and write the length and width according to the problem:**

ⓐ Tarek is making a frame for his rectangular picture. The frame is **45 cm** long and **25 cm** wide. What is the length (perimeter) of the frame?

45 + 45 + 25 + 25 = 140 cm

45 cm

25 cm 25 cm

45 cm

ⓑ Omar is building a square fence around his garden. Each side is **8 meters** long. What is the length of the fence?

ⓒ Essam wants to put a wooden frame around a **2 m** long and **1 m** wide window. What is the length of the frame?

Find the length and width of a rectangle with a perimeter of 12 cm.

L + W = ($\frac{1}{2}$ Perimeter) 12 ÷ 2 = 6 cm.

6 can be divided as in one of the following ways:

6 = 5 + 1	So, *Length = 5 and width = 1 cm*
6 = 4 + 2	So, *Length = 4 and width = 2 cm*
6 = 3 + 3	So, *Length = 3 and width = 3 cm (Square)*

3 Maha walked in a path with a perimeter of 200 m. Draw two different rectangles that can represent her path. Write the length and width on the drawing.

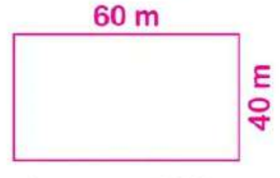
First Rectangle

70 m

30 m

L + w = 100 m
L = 70 m
w = 30 m

Second Rectangle



L + w = 100 m
L = 60 m
w = 40 m

4 Find the perimeter of a square whose sides are 20 cm long. Then draw a rectangle with the same perimeter.

P = 20 X 4 = 80 cm

L + w = 40 cm
L = 30 cm
w = 10 cm

30 cm

10 cm

5 Complete the following:

ⓐ The perimeter of the square = ...S.... X ....4.... .

ⓑ The perimeter of the rectangle = (....L.... + ...W....) X ....2.... .

ⓒ A square has a 7 m side length, then its perimeter is 7 X 4 = 28 m.

ⓓ A rectangle has 8 cm length and 6 cm width, then its perimeter is (8 + 6) X 2 = 28 cm

ⓔ The dimensions of a rectangle are 50 m and 30 m. Then, its perimeter is (50 + 30) X 2= 160 m

/10

1 Complete:

ⓐ A rectangle is 12 m long and 10 m wide, then its perimeter is ....44.... m.

ⓑ A square has a side length of 8 cm, then its perimeter is ....32.... cm.

ⓒ The perimeter of the rectangle = ...L.... X 2 + ...W.... X 2.

2 Choose the correct answer:

ⓐ If the perimeter of a rectangle is 12 cm, then its dimensions are 4 cm, 2 cm

(4 cm, 3 cm or 4 cm, 2 cm or 6 cm, 2 cm or 8 cm, 4cm)

ⓑ The perimeter of the rectangle: ....P= L + W + L + W

(P = L x W or P = L x W x L x W or P = L + W + L + W or P = L x W x 2)

ⓒ A square has a side length of 6 cm, then its perimeter is ....24.... cm.

(24 or 36 or 18 or 22)

3 A square has a side length of 6 cm. Find its perimeter. Then draw a rectangle with the same perimeter.

P = 6 X 4 = 24 cm

7 cm

5 cm

Lesson 2 Finding Area

Area

A shape area is the surface area of two-dimensional geometric shapes.
Or it is the number of square units that make up a shape.

Ex. The area of the following figure:

- The units that make up the following figure are **15** square units.
- **The area can also be calculated in another way:**
  - We have 3 rows and each row consists of 5 units.
  - Therefore, the area (number of units)

  = 5 X 3 = 15 square units.

5 Units, 3 Units

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15

Units of Area Measurement:

- Any unit of length **(millimeter, centimeter, meter, kilometer)** can be used. However, we always say the word **square** or write **the power of 2** to represent the amount of squares for a given unit which can be plotted in a grid on the figure.
- **Square centimeter (cm^2):** is the area of a square with a side length of **1 cm**.

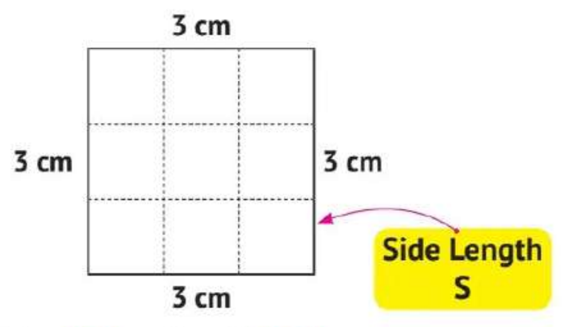
1 cm, 1 cm, 1 cm, 1 cm

- **Square meter (m^2):** is the area of a square with a side length of **1 m**.

Area of the Rectangle:

– To calculate the area of the opposite rectangle:

Area = 4 x 3 = 12 cm^2.



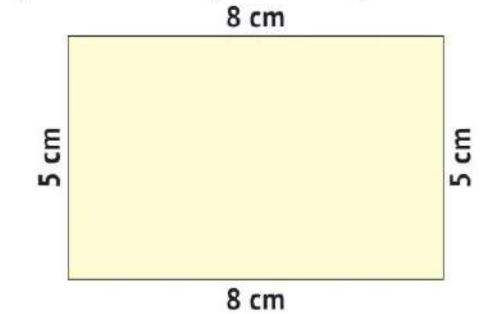
Formula:

– Area of the rectangle = **Length (L)** x **Width (W)**.

A = L X W

Area of the Square:

– To calculate the area of the opposite square:



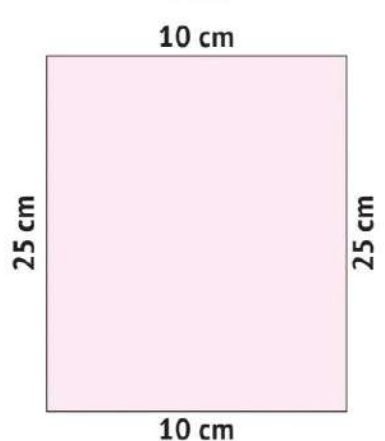
– Area of the square = the length of the side **(S)** x itself **(S)**

A = S X S

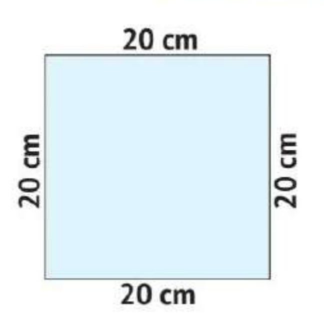
1 **Calculate the area of the following shapes. Show your steps:**

ⓐ Area = 5 X 8 = 40 cm^2

ⓑ Area = 25 X 10 = 250 cm^2



(c) Area = 20 X 20 = 400 cm²



2 **A dining table is 8 m long and 6 m wide. What is the area of the glass needed to cover the top of this table?**

Area = $8 \times 6 = 48 \text{ m}^2$

3 **A square piece of paper has a side length of 9 cm. What is the area of this piece of paper?**

Area = $9 \times 9 = 81 \text{ cm}^2$

4 **A glass window is surrounded by a wooden frame consisting of two parts joined at the two short edges. Each part is in the form of a rectangle of 6 m length and 2 m width.**

Find: The **area** of the glass and the **perimeter** of the wooden frame.

Area = $12 \times 2 = 24 \text{ m}^2$

P = $(12 + 2) \times 2 = 28$ m

5 **Draw two different rectangles with an area of 24 cm², then find the perimeter of each.**

8 cm

3 cm

Perimeter = $(8 + 3) \times 2$

= 22 cm

6 cm

4 cm

Perimeter = $(6 + 4) \times 2$

= 20 cm

6 **Draw a rectangle of 5 cm length and 2 cm width, then find its perimeter and area.**

Perimeter = (5 + 2) X 2

= 14 cm

Area = 5 X 2

= 10 cm²

5 cm

2 cm

7 **A rectangle has an area of 30 square meters.** **(More than one answer)**
What is the perimeter of this rectangle? Draw your answer with the dimensions.

Perimeter = (6 + 5) X 2

= 22 cm

6 cm

5 cm

8 **Choose the correct answer:**

a) The area of the square: A = S X S .

(A = S X S or A = S + S or A = S X 4 or A = S X 2)

b) The area of the rectangle: A = L X W .

(A = L + W or A = L X W or A = 2 X (L + W) or A = L − W)

c) The dimensions of a rectangle are 20 cm and 8 cm, then its area is 160 cm².

(28 or 82 or 160 or 100)

d) The area of a square with side length 8 mm is 64 mm².

(88 or 32 or 16 or 64)

e) The area of the following shape is 36 m².

(36 or 13 or 80 or 54)

4 m

5 m

4 m

10

1 Complete:

a) A rectangle of 7 cm length and 4 cm width has an area of ....28.... sq cm.

b) A square with a side length of 6 cm has an area of ....36.... sq cm.

c) The area of the rectangle = ...L.... X ....W.... .

2 Choose the correct answer:

a) If the area of a rectangle is 12 sq cm, then its dimensions are 4 cm , 3 cm

(4 cm, 3 cm or 4 cm, 2 cm or 10 cm, 2 cm or 8 cm, 4 cm)

b) The area of the square: A = S X S.

(A = S x 4 or A = S x S or A = S + S or A = S + 4)

c) A square has a side length of 8 cm, then area is ....64.... sq cm

(32 or 16 or 64 or 80)

3 Find the area of a rectangle of 8 cm length and 2 cm width. Then draw a square with the same area.

A = 8 X 2 = 16 sq. cm

Unkown Dimensions

Rectangle

- If we have the **perimeter or area** of a rectangle and **one** of **its dimensions** (length or width), we can get the other dimension as shown in the following figure.

Length (L)

Length = (Perimeter ÷ 2) – Width

$L = (P \div 2) - W$

Width (W)

Width = (Perimeter ÷ 2) – Length

$W = (P \div 2) - L$

Ex. **The perimeter of a rectangle is 20 cm, and its width is 3 cm. Find its length and area.**

Answer: $P \div 2 = 20 \div 2 = 10$ cm , $L = 10 - 3 = 7$ cm

$A = L \times W = 7 \times 3 = 21 \text{ cm}^2$

- If we have the **area** of a rectangle and **one** of **its dimensions** (length or width), we can get the other dimension as shown in the following figure.

Length = Area ÷ Width

Area (A) = Length X Width

Width = Area ÷ Length

Ex. **The area of a rectangle is 32 cm², and its length is 8 cm. Find its width and perimeter.**

Answer: $W = A \div L = 32 \div 8 = 4$ cm.

$P = 2L + 2W = 2 \times 8 + 2 \times 4$

$= 16 + 8 = 24$ cm.

Square

- If we have the **perimeter** of a square, we can get the **length** of the side by dividing the **perimeter by 4**.

Side length = Perimeter ÷ 4

S = P ÷ 4

Side length X Side length = Area

S X S = A

Ex. **A square has a perimeter of 24 cm. Find its side length and area.**

Answer: $S = P \div 4 = 24 \div 4 = 6$ cm. $A = S \times S = 6 \times 6 = 36$ cm^2.

- If we have the **area** of a square, then we can get the **length** of the side by looking for **two identical numbers whose product is equal to the area**.

Ex. **A square has an area of 25 cm^2. Find its side length and perimeter.**

Answer: $25 = 5 \times 5$ **So,** side length = 5 cm.

$P = S \times 4 = 5 \times 4 = 20$ cm.

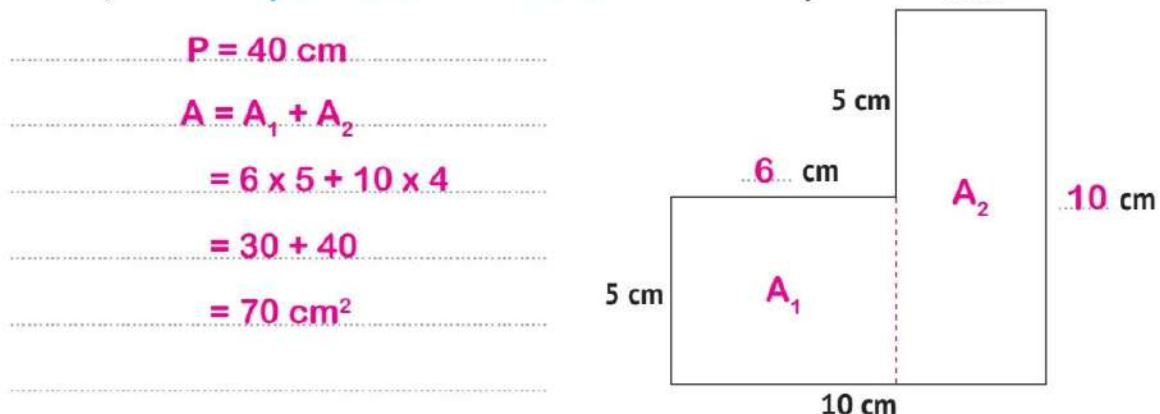
1 **Complete the following table:**

	Length of a Rectangle	Width of a Rectangle	Perimeter (L + W) X 2	Area (L X W)
a	10 cm	7 cm	34 cm	70 cm^2
b	9 m	6 m	30 m	54 m^2
c	12 mm	8 mm	40 mm	96 mm^2
d	9 cm	4 cm	26 cm	36 cm^2
e	8 dm	6 dm	28 dm	48 dm^2

2 Complete the following table:

	Side Length of a Square	Perimeter (S X 4)	Area (S X S)
a	6 cm	24 cm	36 cm^2
b	7 m	28 m	49 m^2
c	8 mm	32 mm	64 mm^2

3 Find the lengths of the unknown sides in the following figure. Then, find the perimeter and area of the shape.



P = 40 cm

$A = A_1 + A_2$

$= 6 \times 5 + 10 \times 4$

$= 30 + 40$

$= 70\ cm^2$

4 Adam wants to make a frame for his father's photo. The photo is in the form of rectangle with an area of 100 cm^2. Find the length and width of the frame. (More than one answer)

L = 20 cm
W = 5 cm

20 cm
5 cm

or

25 cm
4 cm

L = 25 cm
W = 4 cm

5 Ismail needs 120 meters of wire to build a fence around his farm. If the length of one of the sides of the farm is 30 m, what is the length of the other side? Draw a figure showing the farm.

$\frac{1}{2}P = 60$ m (P ÷ 2 = 60 m)

L = 60 – 30

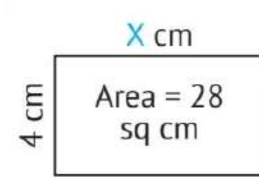
= 30 m

30 m
30 m

/ 10

1 Find the unknown side lengths based on the given areas:

a



28 ÷ 4 = 7 cm

b

X cm... 10 units, X units, Area = 50 sq units

50 ÷ 10 = 5 cm

c

X cm, X cm, Area = 25 sq cm

5 cm

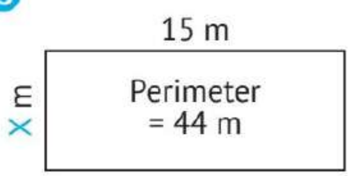
2 Find the unknown side lengths based on the given perimeters:

a

X cm, 5 cm, Perimeter = 26 cm

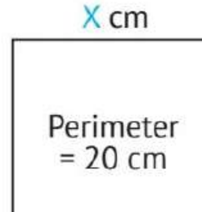
(26 ÷ 2) – 5 = 8 cm

b



(44 ÷ 2) – 15 = 7 cm

c



20 ÷ 4 = 5 cm

3 Hussam used 60 cm of tape to make a frame for a rectangular picture. If the length of the picture is 20 cm, what is the area of this picture?

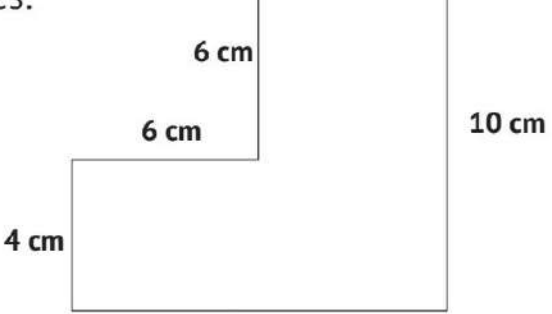
w = (60 ÷ 2) – 20 = 10 cm,

A = 20 X 10 = 200 Sq. cm

Complex Shapes

- The area and perimeter of odd shapes can be calculated in several ways, as in the following examples:

Calculate the area and perimeter of the opposite shape.



First Strategy

Divide the shape into rectangles.

6 cm
6 cm
6 cm
1
2
10 cm
4 cm
12cm

Perimeter = 12 + 10 + 6 + 6 + 6 + 4
= 44 cm.

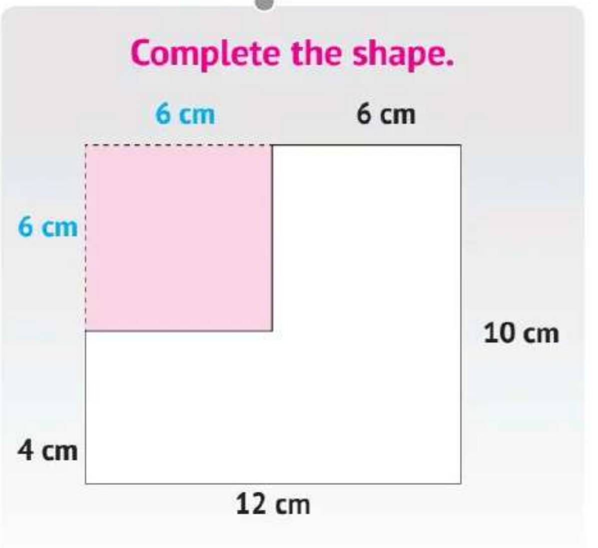
Area of rectangle (1) = 10 x 6 = 60 cm^2.

Area of rectangle (2) = 6 x 4 = 24 cm^2.

Area of the shape = 60 + 24
= 84 cm^2.

Second Strategy

Complete the shape.



Perimeter = 12 + 10 + 6 + 6 + 6 + 4
= 44 cm.

Area of the whole rectangle = 12 x 10
= 120 cm^2.

Area of the added part = 6 x 6 = 36 cm^2.

Area of the shape = 120 – 36 = 84 cm^2.

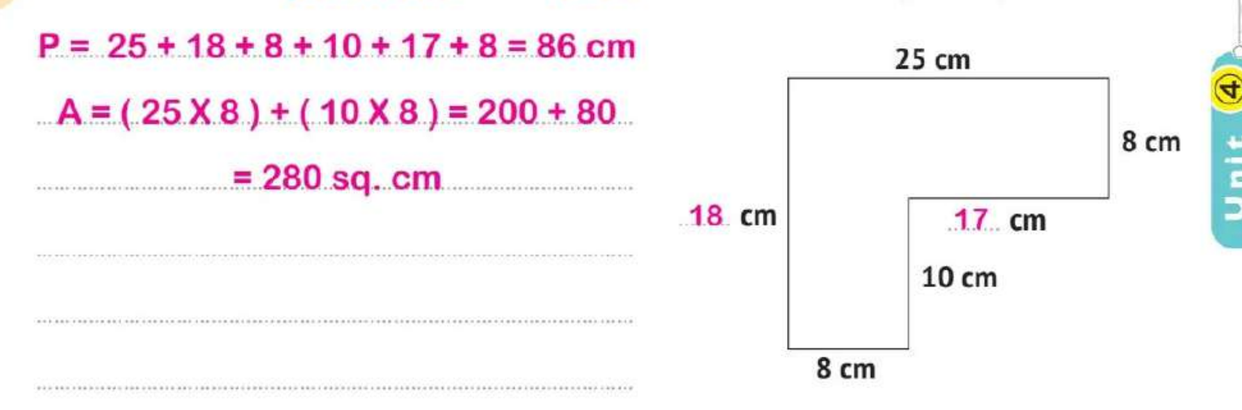
Complexs shapes	أشكال مُركبة	Several ways	طرق متعددة

1 Calculate the perimeter and area of the following shape.

P = 25 + 18 + 8 + 10 + 17 + 8 = 86 cm

A = (25 X 8) + (10 X 8) = 200 + 80

= 280 sq. cm



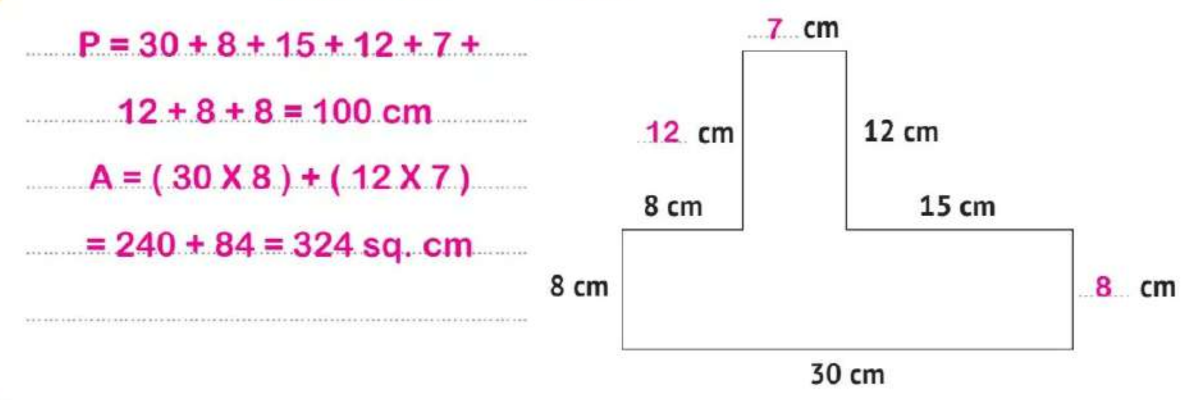
2 Calculate the perimeter and area of the following shape.

P = 30 + 8 + 15 + 12 + 7 +

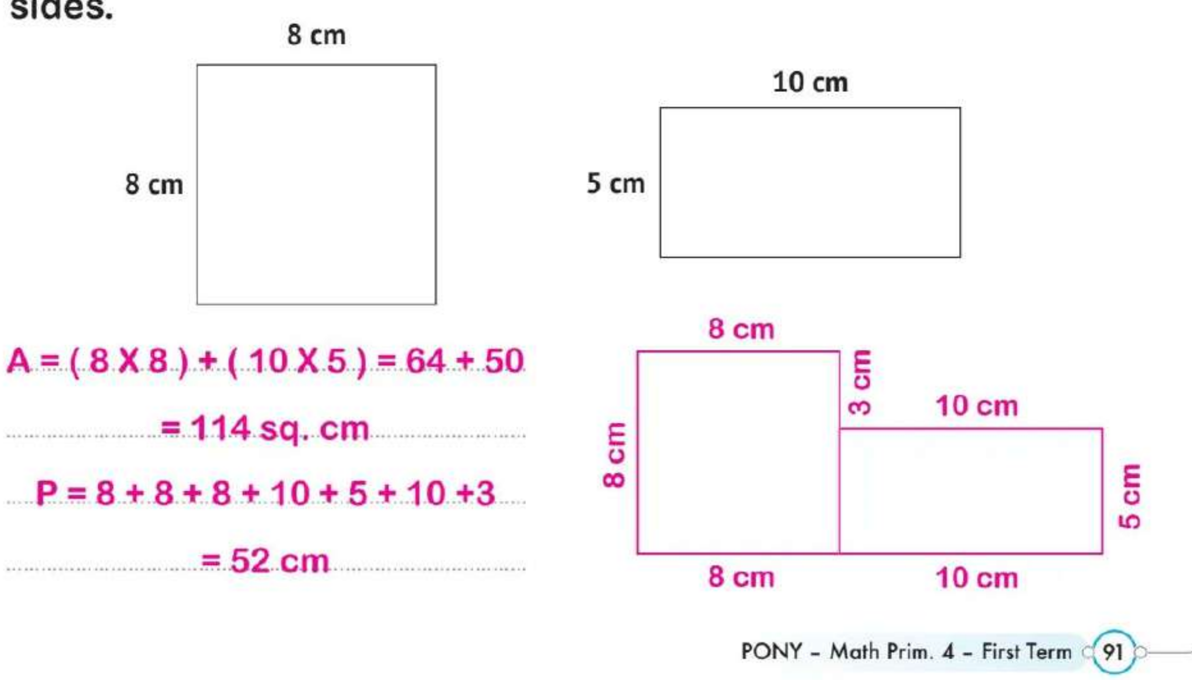
12 + 8 + 8 = 100 cm

A = (30 X 8) + (12 X 7)

= 240 + 84 = 324 sq. cm



3 Combine the following two geometric shapes to form one complex shape. Calculate the area and perimeter of this shape. Draw your geometric figure and write the measurements of the sides.



A = (8 X 8) + (10 X 5) = 64 + 50

= 114 sq. cm

P = 8 + 8 + 8 + 10 + 5 + 10 +3

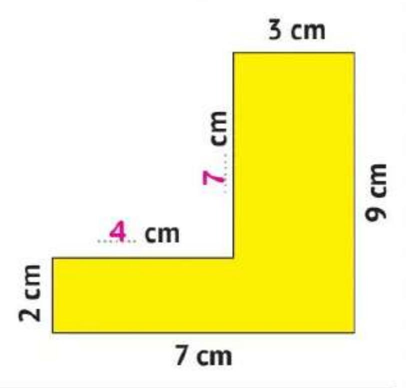
= 52 cm

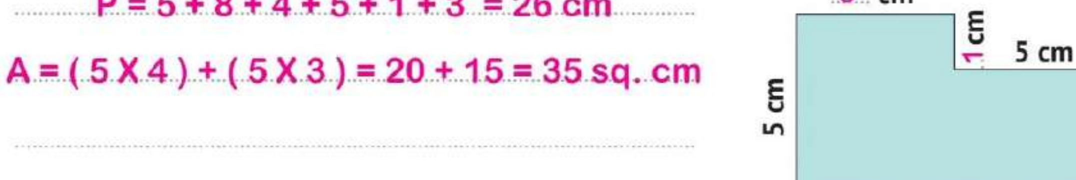
10

1 Find the missing side, then calculate the area of the complex shape:

P = 9 + 7 + 2 + 4 + 7 + 3 = 32 cm

A = (9 X 3) + (4 X 2) = 27 + 8 = 35 sq. cm





2 Find the missing side, then calculate the area of the complex shape:

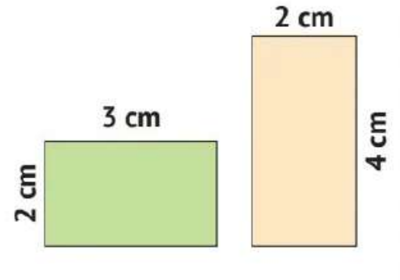
P = 5 + 8 + 4 + 5 + 1 + 3 = 26 cm

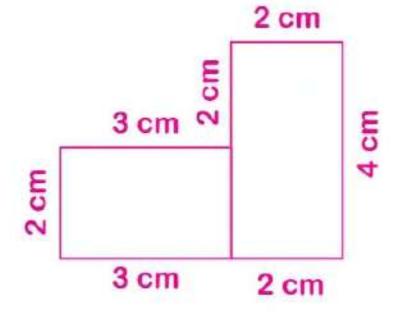
A = (5 X 4) + (5 X 3) = 20 + 15 = 35 sq. cm

3 Combine these two simple shapes to form a complex shape. Then calculate the perimeter and area.

P = 4 + 2 + 3 + 2 + 3 + 2 + 2 = 18 cm

A = (4 X 2) + (3 X 2) = 8 + 6 = 14 sq. cm





Theme 2

Mathematical Operations and Algebraic Thinking

Theme Units:

Multiplicative Comparisons

Lessons 1–3

Multiplicative Comparison
Creating Multiplicative Comparison Equations
Solving Multiplicative Comparison Equations

Learning Objectives:

By the end of these lessons, the student will be able to:

- Define multiplicative comparison.
- Explain how multiplication can be used to compare numbers.
- Create models to show multiplicative comparisons.
- Create multiplication equations to represent comparisons.
- Use a letter to represent a missing number in a multiplication problem.
- Solve a multiplication equation that represents a comparison.

Multiplicative Comparison
Creating Multiplicative Comparison Equations
Solving Multiplicative Comparison Equations

Learn

4 X 6 = 24, 24 can be decomposed as:

24: 6 + 6 + 6 + 6

24: 4 + 4 + 4 + 4 + 4 + 4

So, 24 is **4** times greater than 6 **or** 24 is **6** times greater than 4

Ex. ⓐ **Compare** 18 and 6 → **18** is **three** times greater than **6**.

ⓑ **Compare** 18 and 3 → **18** is **six** times greater than **3**.

Tape Diagram

6	6	6	6	6

In the previous tape diagram, we find that "6" is repeated 5 times.

6 + 6 + 6 + 6 + 6 = **30** **i.e.** 6 x 5 = **30**

And we can say that **30** is **5** times greater than **6**.

Equation

It is a mathematical formula in which numbers and symbols are used to express the equality relationship in a number sentence.

The unknown number is expressed by one of the letters (x, y, z, a, b, ...) and it is called "variable".

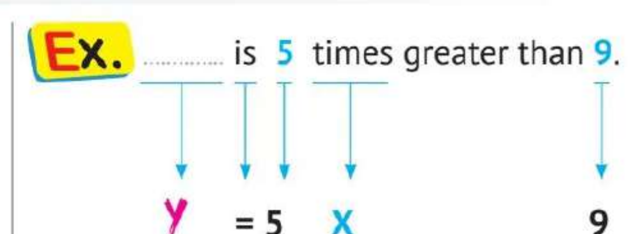
Ex. X + 2 = 5 , 3X = 9 , 2X + 3 = 13

Comparison	مقارنة	Tape diagram	مخطط شريطي	Equation	معادلة
Solving equation	حل المعادلة	Symbols	رموز	Variable	متغير
Numerical sentence			صيغة عددية	Mathematical Formula	صيغة رياضية

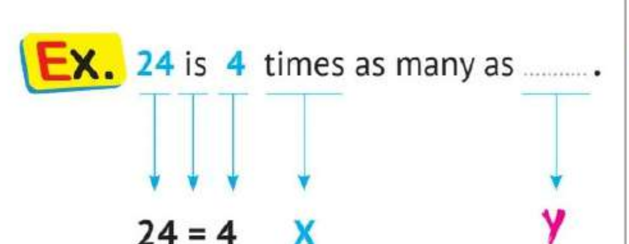
Converting a numerical sentence into an equation

Ex. 3 times greater than 7 is ....

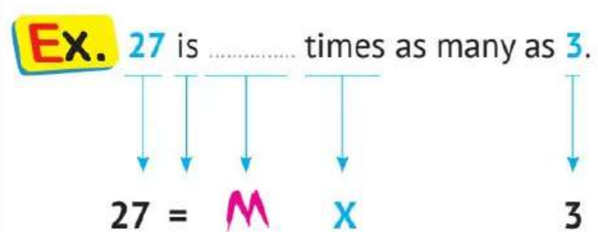
Ex. .... is 5 times greater than 9.



Ex. 24 is 4 times as many as ....



Ex. 27 is .... times as many as 3.



1 **Write an equation for the following comparisons. Use a symbol (letter) to represent the unknown number:**

ⓐ ..... is 4 times greater than 7. → **Equation:** X = 4 X 7 .

ⓑ ..... is 4 times greater than 3. → **Equation:** y = 4 X 3 .

ⓒ ..... is 2 times greater than 7. → **Equation:** k = 2 X 7 .

ⓓ ..... is 6 times as many as 3. → **Equation:** z = 6 X 3 .

ⓔ 24 is 3 times as many as ..... → **Equation:** 24 = 3 X y .

ⓕ 48 is 8 times greater than ..... → **Equation:** 48 = 8 X n .

ⓖ 21 is ..... times greater than 3. → **Equation:** 21 = a X 3 .

ⓗ 36 is ..... times as many as 9. → **Equation:** 36 = m X 9 .

Ex.

Ahmed has 15 balls. This is equal to 5 times greater than the number of balls that his brother Adel has . Write an equation to represent this comparison.

Solution : The number of balls that Ahmed has is 5 times greater than the number of balls that Adel has...

Equation : 15 = 5 x X

2 Read the story problems and think about the comparisons. Then write the multiplication equation that represents each problem.

Use a letter to represent the unknown number. It is **not necessary** to solve the equations.

a) Nadia collected **5** glass balls in **March**, and she continued to collect balls until **May**. By **May**, she had **4 times** more than the number of glass balls she had collected in **March**.

How many glass balls does she have in **May**?

X = 5 X 4 = 20

b) Hamed had **12** pieces of cake. This is equal to **3 times** greater than the number of cakes that his brother Ahmed had.

How many pieces of cake did Ahmed have?

12 = 3 X a

number of pieces = 4

c) Aida walked to school on **Monday** and arrived in **21 minutes**.

On **Tuesday**, she rode her bike to school and arrived in **7 minutes**.

How many more times was riding her bike faster than walking?

21 = y X 7

number of times = 3

d) Sarah ran around the football field **4 times**.

Aya ran around the football field **twice** as many times as Sarah.

How many times did Aya run around the football field?

X = 2 X 4

number of times = 8

e) Rana has **6 mangoes**. Her brother Sherif has **18 mangoes**.

How many times is the number of mangoes with Sherif the same as the number of mangoes with Rana?

18 = 6 X m

number of times = 3

Theme 2

Solve the equation = Find the value of the unknown (variable)

Ex. **Write a comparison equation, use letters to represent the unknown, then find the value of the unknown.**

a) **What number is 3 times greater than 8 ?**

Equation: $X = 3 \times 8$

Solution: $X = 24$

b) **28 is 4 times more than which number?**

Equation: $28 = 4 \times y$

Solution: $y = 28 \div 4 = 7$

3 Write a comparison equation, use symbols (letters) to represent the unknown. Then find the value:

a) What number is 8 times greater than 4?

Equation: $X = 8 \times 4$. **Solution:** $X = 32$.

b) What number is 6 times more than 5?

Equation: $y = 6 \times 5$. **Solution:** $y = 30$.

c) What number is 9 times as many as 2?

Equation: $m = 9 \times 2$. **Solution:** $m = 18$.

d) 18 is 6 times greater than what number?

Equation: $18 = 6 \times a$. **Solution:** $a = 18 \div 6 = 3$.

e) 36 is 4 times more than what number?

Equation: $36 = 4 \times b$. **Solution:** $b = 36 \div 4 = 9$.

f) 42 is 7 times as many as what number?

Equation: $42 = 7 \times n$. **Solution:** $n = 42 \div 7 = 6$.

4 Read the story problems and think about the comparisons. Then write the multiplication equation that represents each problem.

Use a letter to represent the unknown number. Then solve the equations:

a. Rana has **15 candy bars**. This is **3 times** more than the number of candy bars her brother Karim has. How many candy bars are there with Karim?

Equation: $15 = 3 \times a$. **Solution:** $a = 15 \div 3 = 5$.

b. Alaa ran around the football field **5 times**. Aya ran around the field **3 times** as many times as Alaa.

How many times did Aya run around the field?

Equation: $b = 5 \times 3$. **Solution:** $b = 15$.

c. Saleh has **5 oranges**. His brother, Adel, has **20 oranges**.

How many times is the number of oranges with Adel the same as the number of oranges with Saleh?

Equation: $20 = 5 \times a$. **Solution:** $a = 20 \div 5 = 4$.

d. The height of a building is **24 meters**. A tree is **3 meters** high.

How many times is the height of the building the same as the height of the tree?

Equation: $24 = 3 \times y$. **Solution:** $y = 24 \div 3 = 8$.

Theme 2

10

1 Complete the following:

a) 45 is ......9...... times the number 5.

b) The multiplication equation of 6 + 6 + 6 = 18 is ...6... X ...3... = ...18...

c) ......28...... is 4 times the number 7.

2 Choose the correct answer:

a) If $3x = 9$, then $x =$ ......3...... . (3 or 27 or 12 or 6)

b) If 63 = 7 X m, then 63 is ......9...... times more than m. (63 or 9 or 7 or 2)

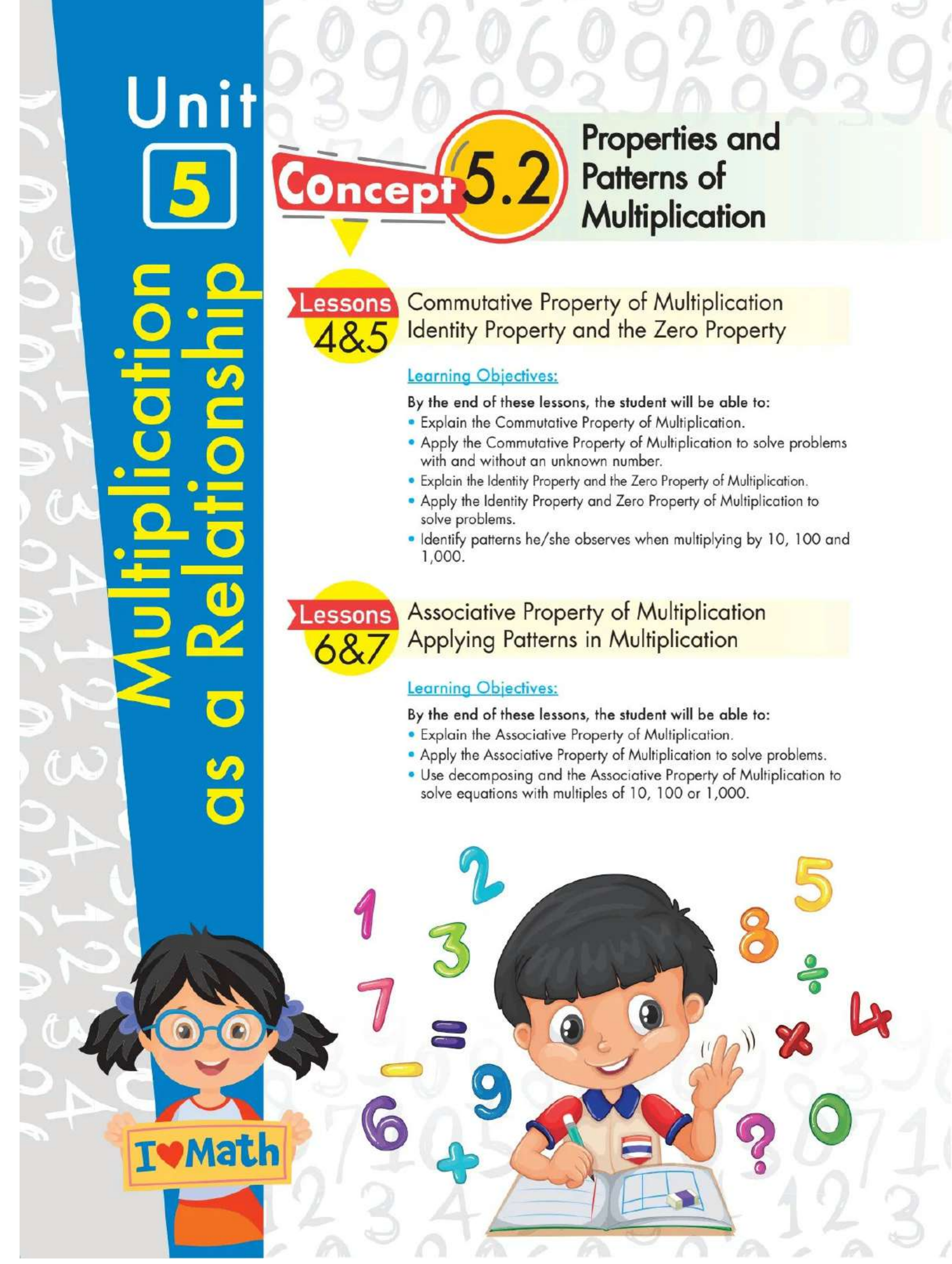
c) The equation for the comparison: 15 is a times greater than 3 is ..a X 3 = 15..

(a X 3 = 15 or 15 X a = 3 or 15 X 3 = a or a + 3 = 15)

3 If the price of one pen is 3 pounds, then what is the price of 7 pens?

(Write the multiplication equation that represents the sentences).

a = 3 X 7 = 21 pounds



Unit 5

Multiplication as a Relationship

Concept 5.2 Properties and Patterns of Multiplication

Lessons 4&5 Commutative Property of Multiplication Identity Property and the Zero Property

Learning Objectives:

By the end of these lessons, the student will be able to:

- Explain the Commutative Property of Multiplication.
- Apply the Commutative Property of Multiplication to solve problems with and without an unknown number.
- Explain the Identity Property and the Zero Property of Multiplication.
- Apply the Identity Property and Zero Property of Multiplication to solve problems.
- Identify patterns he/she observes when multiplying by 10, 100 and 1,000.

Lessons 6&7 Associative Property of Multiplication Applying Patterns in Multiplication

Learning Objectives:

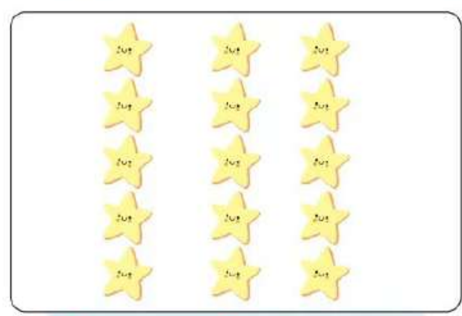
By the end of these lessons, the student will be able to:

- Explain the Associative Property of Multiplication.
- Apply the Associative Property of Multiplication to solve problems.
- Use decomposing and the Associative Property of Multiplication to solve equations with multiples of 10, 100 or 1,000.

Commutative Property of Multiplication Identity Property the Zero Property

Arrays and the Commutative Property

Note the following arrays:



5 rows of 3 stars each

$5 \times 3 = 15$

3 rows of 5 stars each

$3 \times 5 = 15$

So, $5 \times 3 = 3 \times 5$

In the following array:

4 rows, 3 circles in each row: $4 \times 3 = 12$

3 columns, 4 circles in each column: $3 \times 4 = 12$

So, $4 \times 3 = 3 \times 4$

From the previous, we find that:

$5 \times 3 = 3 \times 5$, $4 \times 3 = 3 \times 4$

The product of multiplication is **not affected** by changing the **places** of the factors in the multiplication process **(Commutative Property)**.

1 Complete the following:

a) 5 X ....7.... = 7 X 5

b) ....6.... X 3 = 3 X 6

c) 8 X 6 = ...6.... X 8

d) 9 X 3 = 3 X ....9....

Commutative Property	خاصية الإبدال	Identity Property	خاصية المحايد

2 Use the Commutative Property of Multiplication to find the unknown value:

a) If 5 X x = 8 X 5 then, x = 8 .

b) If y X 4 = 4 X 10 then, y = 10 .

c) If 6 X 3 = 3 X m then, m = 6 .

d) If 4 X 8 = a X 4 then, a = 8 .

3 Saleh has 30 eggs. Write an equation using the Commutative Property of Multiplication to describe two ways in which he can arrange the eggs.

5 X 6 = 6 X 5 or 3 X 10 = 10 X 3

4 Lamia has 40 books. Write an equation using the Commutative Property of Multiplication to describe two ways in which she can arrange the books.

5 X 8 = 8 X 5

Learn Identity Property of Multiplication

(The Identity Element Property of Multiplication) [1]

Note that: 8 x 1 = 8 , 1 x 8 = 8

So, 8 X 1 = 1 X 8 = 8

The product of any number multiplied by "1" is the **same** number.

Zero Property of Multiplication (Multiplying by Zero):

Note that: 8 x 0 = 0 , 0 x 8 = 0

So, 8 x 0 = 0 x 8 = 0

The product of any number multiplied by zero is zero.

Multiplying by 10, 100 and 1,000, ...

6 x 1 → 6 X 10 = 60 , 6 x 1 → 6 X 100 = 600 , 6 x 1 → 6 X 1,000 = 6,000

- When multiplying by **10, 100, 1,000, ...**
- Take out the **zeros** on the **right** and then complete the multiplication.

5 Complete the following:

ⓐ 5 x ....0.... = 0 ⓑ ....0.... x 7 = 0 ⓒ ....1.... x 6 = 6

ⓓ ....9.... x 1 = 9 ⓔ 1 x ....7.... = 7 ⓕ 3 x ....1.... = 3

6 Find the product of:

ⓐ 8 x 10 = ...80.... ⓑ 9 x 100 = ...900.... ⓒ 1,000 x 6 = ...6,000....

ⓓ 12 x 10 = ...120.... ⓔ 20 x 100 = ...2,000.... ⓕ 30 x 1,000 = 30,000

7 Complete the following:

ⓐ 4 x ....10.... = 40 ⓑ 8 x ....1,000.... = 8,000 ⓒ 6 x ....100.... = 600

ⓓ 10 x ....100.... = 1,000 ⓔ ....10.... x 20 = 200 ⓕ 10 x ....10.... = 100

10

1 Complete the following:

ⓐ 5 X ....7.... = 7 X 5 ⓑ 1,000 X 2 = ...2,000....

ⓒ 16 X 0 = ...0.... ⓓ 200 X ....100.... = 20,000

2 Choose the correct answer:

ⓐ If a X 12 = 12 X 5, then a = ...5.... . (12 or **5** or 60 or 7)

ⓑ 80 X ....1,000.... = 80,000 (10 or 100 or **1,000** or 10,000)

ⓒ If m X 62 = 62, then m = ...1.... . (0 or **1** or 5 or 10)

ⓓ 5 X ....0.... = 0 (**0** or 1 or 5 or 10)

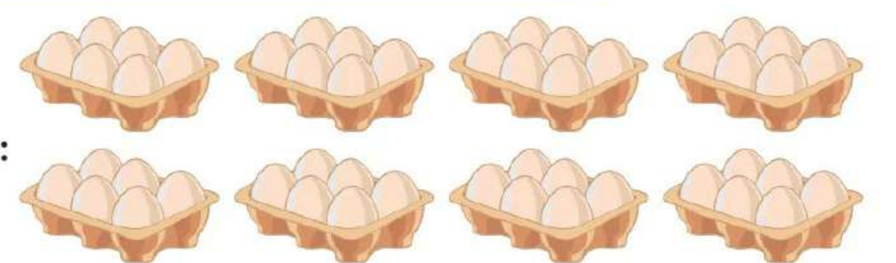
3 The price of one pen is 90 piastres. How much are 10 pens?

....90 X 10 = 900 pounds....

Associative Property of Multiplication
Applying Patterns in Multiplication

Associative Property of Multiplication

In the opposite picture:



Each plate contains 6 eggs. | *Each row contains 4 egg plates.* | *Two rows of egg plates*

To calculate the number of eggs = 6 x 4 x 2

First Method:
- Number of plates: $4 \times 2 = 8$ egg plates.
- Total number of eggs: $8 \times 6 = 48$ eggs.

$$6 \times 4 \times 2 = 6 \times (4 \times 2) = 6 \times 8 = 48$$

Second Method:
- Number of eggs in each row: $6 \times 4 = 24$
- Total number of eggs: $24 \times 2 = 48$ eggs.

$$6 \times 4 \times 2 = (6 \times 4) \times 2 = 24 \times 2 = 48$$

So, $6 \times (4 \times 2) = (6 \times 4) \times 2$

When multiplying more than two numbers, any two numbers can be multiplied first, and this does not affect the result.

(Associative Property)

Associative Property	خاصية الدمج

Theme 2

1 **Find the product using the Associative Property:**

a) 5 x 3 x 2 = (5 x 3) x 2 = 15 x 2 = 30

b) 3 x 4 x 2 = (3 x 4) x 2 = 12 x 2 = 24

c) 2 x 5 x 4 = 2 x (5 x 4) = 2 x 20 = 40

d) 10 x 6 x 5 = 10 x (6 x 5) = 10 x 30 = 300

2 **Complete the following:**

a) (5 x 3) x 6 = 5 x (3 x 6)

b) (3 x 6) x 4 = 3 x (6 x 4)

c) (9 x 2) x 7 = 9 x (2 x 7)

d) (2 x 7) x 8 = 2 x (7 x 8)

3 **Use the Distributive Property of Multiplication to count the number of eggs in the opposite picture.**

6 X 2 X 3 = 6 X (2 X 3)

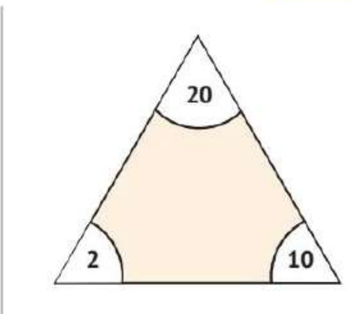
= 6 X 6 = 36 eggs.

4 **Emad bought 4 packs of water bottles. Each pack contains two rows of bottles, each row has 5 bottles.**

How many bottles of water did Emad buy?

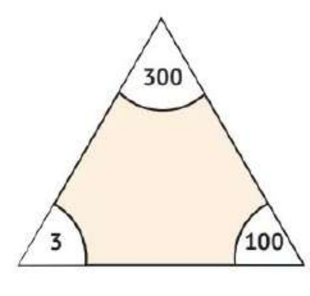
4 X 2 X 5 = 4 X (2 X 5) = 4 X 10 = 40 bottles.

Decomposition of Multiples of 10



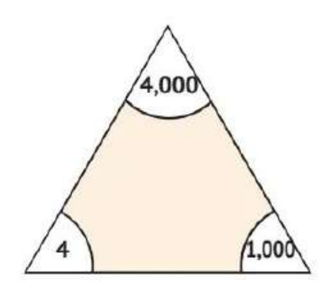
20 = 2 X 10

20 = 2 Tens



300 = 3 X 100

300 = 3 Hundreds



4,000 = 4 X 1,000

4,000 = 4 Thousands

Ex. **Use decomposing a number into its factors and the Associative Property of Multiplication to solve each of the following:**

a) 20 x 7 b) 8 x 300 c) 6 x 5,000

Solution:

a) 20 X 7
= (10 X 2) X 7
= 10 X (2 X 7)
= 10 X 14
= 140

b) 8 X 300
= 8 X (3 X 100)
= (8 X 3) X 100
= 24 X 100
= 2,400

c) 6 X 5,000
= 6 X (5 X 1,000)
= (6 X 5) X 1,000
= 30 X 1,000
= 30,000

5 Complete the following:

a) 40 = 10 x 4
b) 600 = 100 x 6
c) 80 = 8 Tens
d) 500 = 5 Hundreds
e) 6,000 = 60 Hundreds

6 Use decomposing a number into its factors and the Associative Property of Multiplication to solve each of the following:

a) 8 x 30 = 8 x (3 x 10) = (8 x 3) x 10
= 24 x 10 = 240

b) 6 x 40 = 6 x (4 x 10) = (6 x 4) x 10
= 24 x 10 = 240

c) 5 x 800 = 5 x (8 x 100) = (5 x 8) x 100
= 40 x 100 = 4,000

d) 9 x 700 = 9 X (7 X 100) = (9 X 7) X 100
= 63 X 100 = 6,300

e) 5 x 8,000 = 5 X (8 X 1,000) = (5 X 8) X 1,000
40 X 1,000 = 40,000

f) 7 x 6,000 = 7 X (6 X 1,000)= (7 X 6) X 1,000
= 42 X 1,000 = 42,000

10

1 Complete the following:

a) 6 X ...... 2 ...... X 10 = (...... 6 ...... X 2) X 10

b) 7 X 50 = 35 X ...... 10 ......

c) 3 X 4,000 = ... 12,000 ......

d) 9 X ...... 500 ...... = (...... 9 ...... X 5) X 100 = 45 X 100

2 Choose the correct answer:

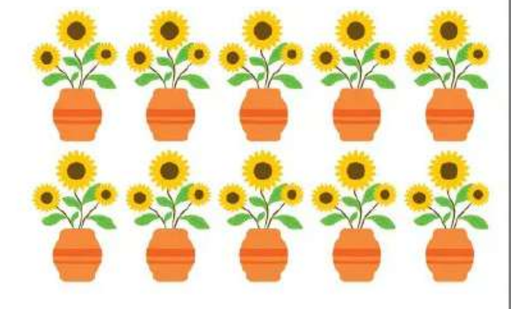
a) 7 X (3 X 5) = (...... 7 ...... X 3) X 5 (21 or 7 or 5 or 3)

b) 6 X 300 = 18 X ...... 100 ...... (9 or 10 or 100 or 1,000)

c) 8 X 21 ...... > ...... 8 X 7 X 2 (< or = or >)

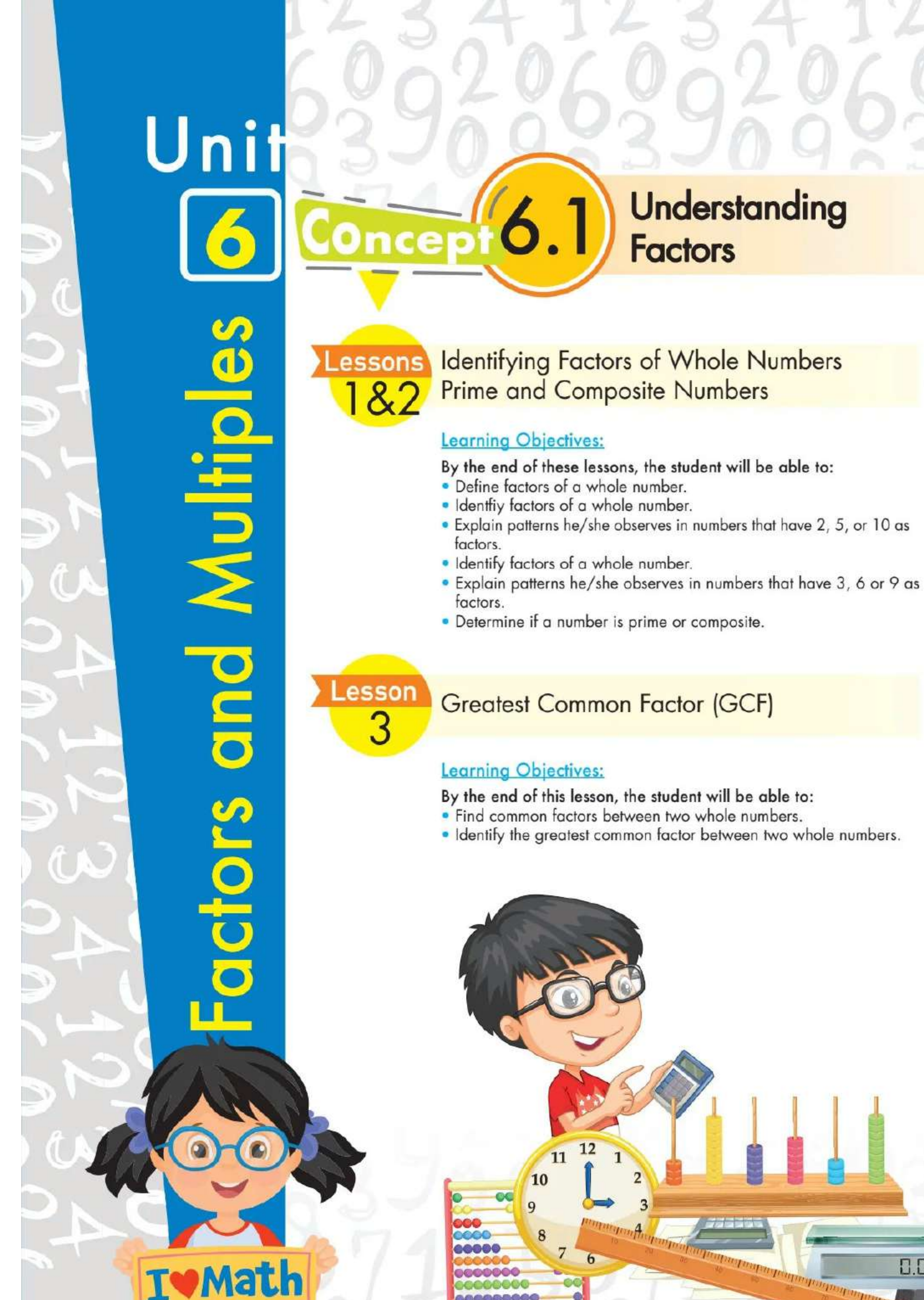
d) 900 Thousands ...... < ...... 90 Millions (< or = or >)

3 Use the Associative Property of Multiplication to calculate the number of flowers.



(2 X 5 X 3)

10 X 3 = 30 flowers.



Unit 6 Factors and Multiples

Concept 6.1 Understanding Factors

Lessons 1&2 Identifying Factors of Whole Numbers Prime and Composite Numbers

Learning Objectives:

By the end of these lessons, the student will be able to:

- Define factors of a whole number.
- Identfiy factors of a whole number.
- Explain patterns he/she observes in numbers that have 2, 5, or 10 as factors.
- Identify factors of a whole number.
- Explain patterns he/she observes in numbers that have 3, 6 or 9 as factors.
- Determine if a number is prime or composite.

Lesson 3 Greatest Common Factor (GCF)

Learning Objectives:

By the end of this lesson, the student will be able to:

- Find common factors between two whole numbers.
- Identify the greatest common factor between two whole numbers.

Identifying Factors of Whole Numbers
Prime and Composite Numbers

Learn: Identifying Factors of Whole Numbers

- From the above, we find that "3" is one of the factors of 15 and "5" is one of the factors of 15.
- **A factor:** is a number multiplied by another number to get a product.

Ex. Find all factors of 18.

Factors of 18 can be found in several ways:

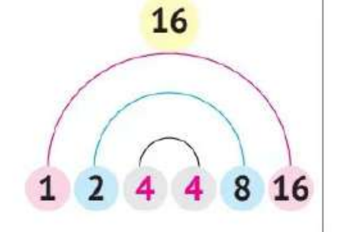
Factor Pairs أزواج العوامل	Factor Tree شجرة العوامل	Factor Rainbow قوس قزح	Factor T-chart مخطط العوامل
1 X 18 2 X 9 3 X 6	18 1 2 3 6 9 18	18 1 2 3 6 9 18	18 1 | 18 2 | 9 3 | 6

From above, we find that the factors of 18 are 1, 2, 3, 6, 9, 18.

Ex. Find all factors of 16.

The factors of 16 are:

1 , 2 , 4 , 8 , 16



16	
1	16
2	8
4	4

Factor عامل	Prime Numbers أعداد أولية	Composite Numbers أعداد غير أولية (مركبة)

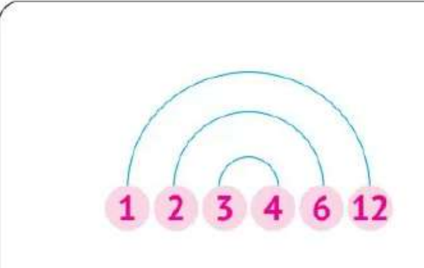
- Factors are written **without** repetition.
- **1** is a common factor of **all numbers**.
- Any number has at least **two factors**, the number itself and one, except **1** that has **only one factor**.
- **"Zero"** is not a factor of any number.

1 **Find all factors of each number using a factor rainbow and a factor T-chart:**

ⓐ **12:**

The factors of 12 are:

1, 2, 3, 4, 6, 12

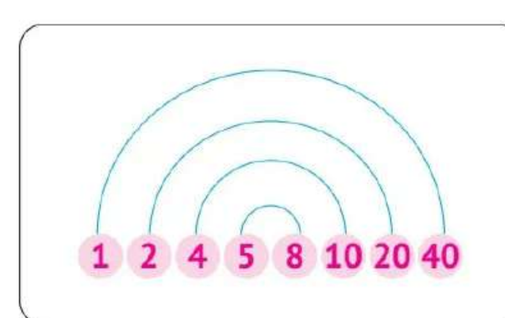


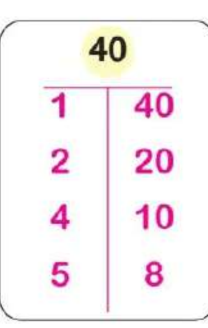
12	
1	12
2	6
3	4

ⓑ **40:**

The factors of 40 are:

1, 2, 4, 5, 8, 10, 20, 40

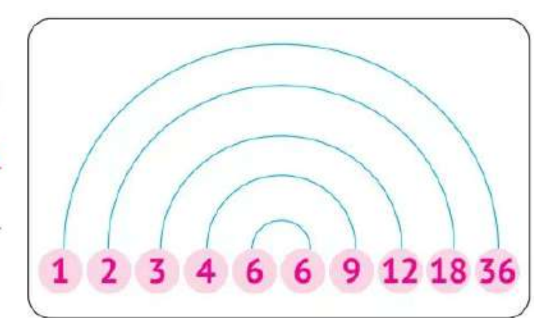




ⓒ **36:**

The factors of 36 are:

1, 2, 3, 4, 6, 9, 12, 18, 36



36	
1	36
2	18
3	12
4	9
6	6

2 **Find all factors of each of the following numbers:**
(Use the method you prefer)

ⓐ 25

1 X 25
5 X 5

The factors of **25** are:
1, 5, 25

ⓑ 48

1 X 48
2 X 24
3 X 16
4 X 12
6 X 8

The factors of **48** are:
1, 2, 3, 4, 6, 8, 12, 16, 24, 48

ⓒ 19

1 X 19

The factors of **19** are:
1,19

Important Notes:

- To determine numbers with factors of **2, 5 or 10** using the **100 Chart**, we can count by jumping by **2, 5 or 10**.

91	92	93	94	95	96	97	98	99	100
81	82	83	84	85	86	87	88	89	90
71	72	73	74	75	76	77	78	79	80
61	62	63	64	65	66	67	68	69	70
51	52	53	54	55	56	57	58	59	60
41	42	43	44	45	46	47	48	49	50
31	32	33	34	35	36	37	38	39	40
21	22	23	24	25	26	27	28	29	30
11	12	13	14	15	16	17	18	19	20
1	2	3	4	5	6	7	8	9	10

- **We find that:**

Numbers with "2" as a factor
Numbers whose Ones digit is **0, 2, 4, 6, 8** (even numbers).

Numbers with "5" as a factor
Numbers whose Ones digit is **0 or 5**.

Numbers with "10" as a factor
Numbers whose Ones digit is **0**.

3 **From the 100 chart write three numbers whose factors are 2, 5, 10:**
10, 20, 30

4 **Circle the factors of the following numbers:**

ⓐ 15 (2 , ⑤ , 10)
ⓑ 30 (② , ⑤ , ⑩)
ⓒ 12 (② , 5 , 10)
ⓓ 25 (2 , ⑤ , 10)
ⓔ 36 (② , 5 , 10)

Numbers with "3" as a factor:

- A number has 3 as a factor if the sum of the digits is a number that is said when skip counting by 3s.

Ex. **72 has 3 as a factor.**

Because: **7 + 2 = 9** and **9** is a number we say when skip counting by **3s**.

Numbers with "6" as a factor:

- A number has 6 as a factor if:

1. It is an even number.
2. The sum of the digits is a number that is said when skip counting by **3s. "It has both a factor of 2 and 3"**

Ex. **96 has 6 as a factor.**

Because:
1. 96 is an even number.
2. **9 + 6 = 15**, and 15 is a number we say when skip counting by **3s**.

Numbers with "9" as a factor:

- A number has 9 as a factor if the sum of the digits is a number that is said when skip counting by 9s. **The final sum of the digits is always 9.**

Ex. **486 has 9 as a factor.**

Because: **4 + 8 + 6 = 18**, and **18** is a number we say when skip counting by **9s**.

5 Complete the following table, as in the example:

Number	Factors				
	2	3	6	9	5
Ex. 24	✓	✓	✓	✗	✗
a 15	✗	✓	✗	✗	✓
b 36	✓	✓	✓	✓	✗
c 10	✓	✗	✗	✗	✓
d 18	✓	✓	✓	✓	✗
e 40	✓	✗	✗	✗	✓
f 63	✗	✓	✗	✓	✗

Prime and Composite Numbers

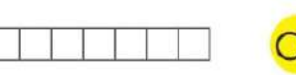
Prime Numbers

A prime number is a whole number that has exactly two different factors, 1 and itself.

Ex. 7 has only two different factors, 1 and 7.

So, 7 is a prime number.

Only one rectangle of area: 7 square units can be created.



OR

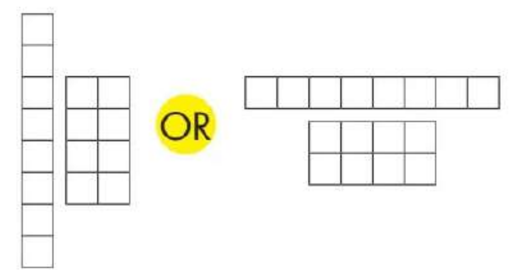
Composite Numbers

A composite number is a whole number that has more than two factors.

Ex. 8 has 4 factors.
"1 X 8 = 8 , 2 X 4 = 8"

So, 8 is a composite number.

Many rectangles of area: 8 square units can be created.



- **1** is neither prime nor composite because it has only **one factor**.
- **2** is the **smallest** prime number.
- All prime numbers are **odd** numbers, except **2** is an **even** number.
- **3** is the **smallest odd** prime number.
- **The prime numbers which lie between 1 and 100 are:**

The prime number between			The prime number between		
0	2 , 3 , 5 , 7	10	50	53 , 59	60
10	11 , 13 , 17 , 19	20	60	61 , 67	70
20	23 , 29	30	70	71 , 73 , 79	80
30	31 , 37	40	80	83 , 89	90
40	41 , 43 , 47	50	90	97	100

6 **Write all factors of the following numbers. Then write if the number is prime or composite:**

Number	Factors	Number of Factors	Prime or Composite
a 14	1, 2, 7, 14	4	Composite
b 46	1, 2, 23, 46	4	Composite
c 22	1, 2, 11, 22	4	Composite
d 59	1, 59	2	Prime
e 50	1, 2, 5, 10, 25, 50	6	Composite
f 29	1,29	2	Prime

7 Complete the following:

a) An even number between 20 and 30. Some of its factors are 1, 2, 4, 7 and 14.
The number is: 28

b) An even number greater than 40 and less than 60 with 10 factors.
The number is: 48

c) A two-digit number, 5 and 7 are from its factors, the Tens place digit is less than the Ones place digit.
The number is: 35

10

1 Complete:

a) The number that has only two factors is called prime number

b) The prime numbers between 20 and 30 are 23 , 29.

c) All prime numbers are odd numbers, except the number 2 is an even number.

2 Choose the correct answer:

a) The smallest odd prime number is 3 . (1 or 2 or 3 or 5)

b) The number of factors of 16 is 5 factors. (3 or 4 or 5 or 6)

c) A number whose all factors are (1, 2, 4, 5, 10, 20) is 20 . (20 or 10 or 100 or 200)

3 Find all the factors of each number using a factor T-chart and a factor rainbow:

a) Factors of 18 are:
1,2,3,6,9,18

b) Factors of 20 are:
1,2,4,5,10,20

Lesson 3 Greatest Common Factor (GCF)

Learn: Common Factors between Two Numbers

To find the common factor between two numbers, we follow these steps:

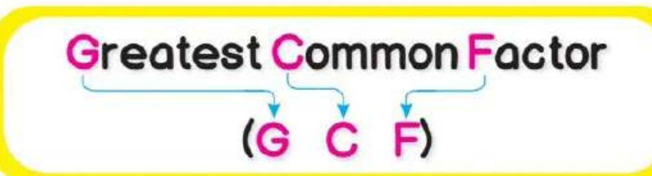
1. **Find** the factors of each number through one of the previous methods.
2. **Rearrange** these factors from **the least to the greatest**.
3. **Determine** the **common factors** between the two numbers.

Ex. **Find the common factors of the numbers 18 and 24:**

18	
1	18
2	9
3	6

24	
1	24
2	12
3	8
4	6

- Factors of 18 are: 1 , 2 , 3 , 6 , 9 , 18.
- Factors of 24 are: 1 , 2 , 3 , 4 , 6 , 8 , 12 , 24.
- The common factors of 18 and 24 are: 1, 2, 3, 6.



- **To find the greatest common factor between two numbers, we follow the previous steps, then the largest number of the common factors is the Greatest Common Factor (GCF).**

In the previous example:

- The common factors of 18 and 24 are: 1, 2, 3 and 6.
- The GCF of 18 and 24 is "6".

- **1** is the **common factor** of all numbers.
- All prime numbers have only one common factor that is **1**.

1 **Find the greatest common factor of each of the following numbers:**

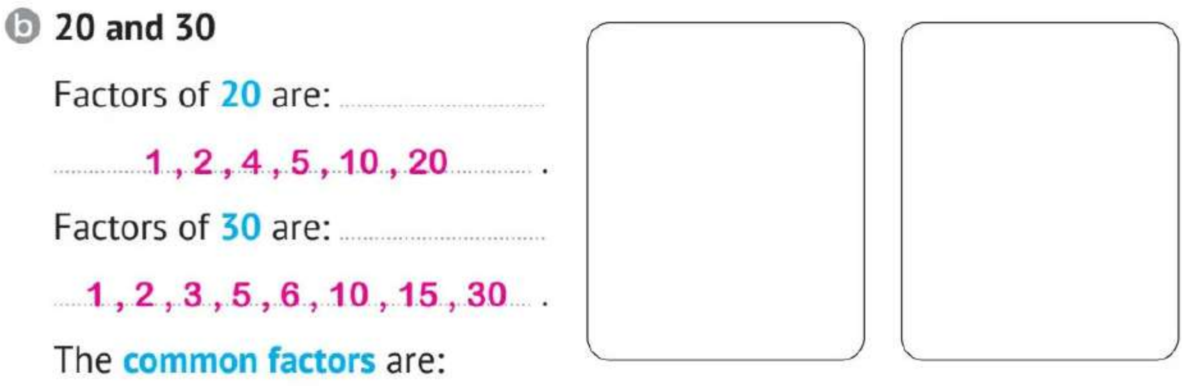
a **12 and 16**

Factors of 12 are: 1 , 2 , 3 , 4 , 6 , 12 .

Factors of 16 are: 1 , 2 , 4 , 8 , 16 .

The **common factors** are: 1 , 2 , 4 .

The **greatest common factor** (GCF) is: 4 .



b **20 and 30**

Factors of 20 are: 1 , 2 , 4 , 5 , 10 , 20 .

Factors of 30 are: 1 , 2 , 3 , 5 , 6 , 10 , 15 , 30 .

The **common factors** are: 1 , 2 , 5 , 10 .

The **greatest common factor** (GCF) is: 10 .

c 21 and 35

Factors of **21** are: 1 , 3 , 7 , 21 .

Factors of **35** are: 1 , 5 , 7 , 35 .

The **common factors** are: 1 , 7 .

The **greatest common factor** (GCF) is: 7 .

d 11 and 15

Factors of **11** are: 1 , 11 .

Factors of **15** are: 1 , 3 , 5 , 15 .

The **common factors** are: 1 .

The **greatest common factor** (GCF) is: 1 .

2 **The fourth grade of primary school students will go on a school trip. There are 36 girls and 27 boys. The students will be divided into equal groups of girls and equal groups of boys.**
What is the largest number of groups that can be formed so that each group has the same number of students?
How many boys are in each group of boys? How many girls are in each group of girls?

Largest number of groups = (GCF) = 9

Number of boys in each group = 27 ÷ 9 = 3 boys.

Number of girls in each group = 36 ÷ 9 = 4 girls.

3 Amira and her friends are going for a walk. Amira wants to take apples and some candy on the journey. She has 24 apples and 36 bags of candy. How many snacks can Amira take if each package contains exactly the same number of apples and the exact same number of candy bags? How many apples are there in each package? How many bags of candy are there in each package?

Number of snacks (GCF) = 12

Number of apples in each package = 24 ÷ 12 = 2 apples.

Number of candy in each package = 36 ÷ 12 = 3 candies.

10

1 Choose the correct answer:

a) ...2... is a common factor of 4 and 6. (12 or 4 or 5 or ②)

b) ...6... is (GCF) of 12 and 6. (12 or ⑥ or 3 or 2)

c) The common factor of all numbers is ...1... (0 or ① or 2 or 3)

2 Find the greatest common factor of 14 and 35:

a) Factors of 14 are: 1,2,7,14 .

b) Factors of 35 are: 1,5,7,35 .

c) The common factors are: 1 , 7 .

d) The (GCF) is: 7 .

3 Nadia has 10 pencils and 15 erasers. She wants to put them in groups, so that each group has the same number of items.

a) The number of groups = 5 .

b) The number of pencils will be in each group = 10÷5= 2 pencils .

c) The number of erasers will be in each group = 15 ÷ 5 = 3 erasers .

Unit 6

Factors and Multiples

Concept 6.2 Understanding Multiples

Lessons 4–6

- Identifying Multiples of Whole Numbers
- Common Multiples
- Relationships Between Factors and Multiples

Learning Objectives:

By the end of these lessons, the student will be able to:

- Define multiples of whole numbers.
- Identify multiples of whole numbers.
- Identify common multiples of two numbers.
- Explain the relationship between factors and multiples.
- Determine if a number is a factor or a multiple of another number.

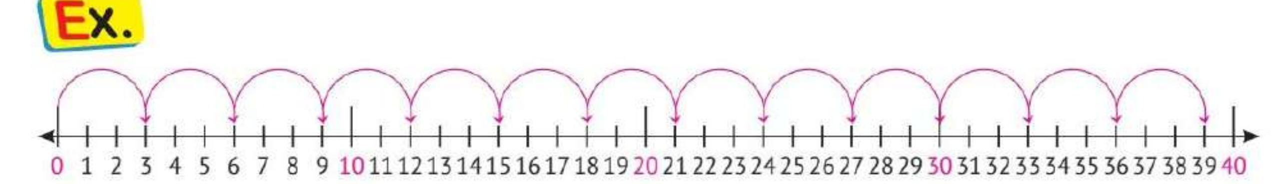
Identifying Multiples of Whole Numbers
Common Multiples
Relationships between Factors and Multiples

Multiple

- A multiple is the **product** of a given whole number **multiplied** by any other whole number.
- **12** is a multiple of **3** and **4** because **3 x 4 = 12.**

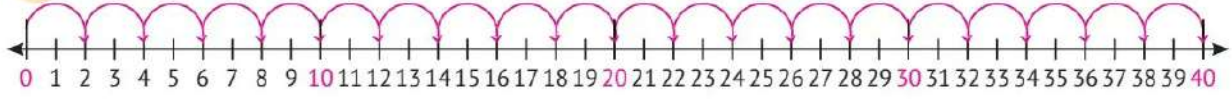
Multiples of a number can be found by skip counting on the number line:

Ex.



– **The multiples of 3 are:** 0 , 3 , 6 , 9 , 12 , 15 , 18 , 21 , 24 , 27 , 30 , 33 , 36 , 39 , ...

1 **Find the multiples of 2 by skip counting on the number line:**



The multiples of 2 are: **0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40.**

2 **Find the multiples of 5 by skip counting on the number line:**

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40

The multiples of 5 are: **0, 5, 10, 15, 20, 25, 30, 35, 40.**

- **Zero** is a common multiple for all numbers.

3 Use the following 100 Chart and color the multiples:

ⓐ Color the multiples of 4.

The multiples of 4 are:

4, 8, 12, 16, 20, 24, 28, 32, 36, 40, 44, 48, 52, 56, 60, 64, 68, 72, 76, 80, 84, 88, 92, 96, 100

91	92	93	94	95	96	97	98	99	100
81	82	83	84	85	86	87	88	89	90
71	72	73	74	75	76	77	78	79	80
61	62	63	64	65	66	67	68	69	70
51	52	53	54	55	56	57	58	59	60
41	42	43	44	45	46	47	48	49	50
31	32	33	34	35	36	37	38	39	40
21	22	23	24	25	26	27	28	29	30
11	12	13	14	15	16	17	18	19	20
1	2	3	4	5	6	7	8	9	10

ⓑ Color the multiples of 10.

The multiples of 10 are:

10, 20, 30, 40, 50, 60, 70, 80, 90, 100

91	92	93	94	95	96	97	98	99	100
81	82	83	84	85	86	87	88	89	90
71	72	73	74	75	76	77	78	79	80
61	62	63	64	65	66	67	68	69	70
51	52	53	54	55	56	57	58	59	60
41	42	43	44	45	46	47	48	49	50
31	32	33	34	35	36	37	38	39	40
21	22	23	24	25	26	27	28	29	30
11	12	13	14	15	16	17	18	19	20
1	2	3	4	5	6	7	8	9	10

4 Answer the following:

ⓐ Skip count by 8 and fill in the blanks:

0, 8, 16, 24, 32, 40, 48, 56, 64, 72, 80.

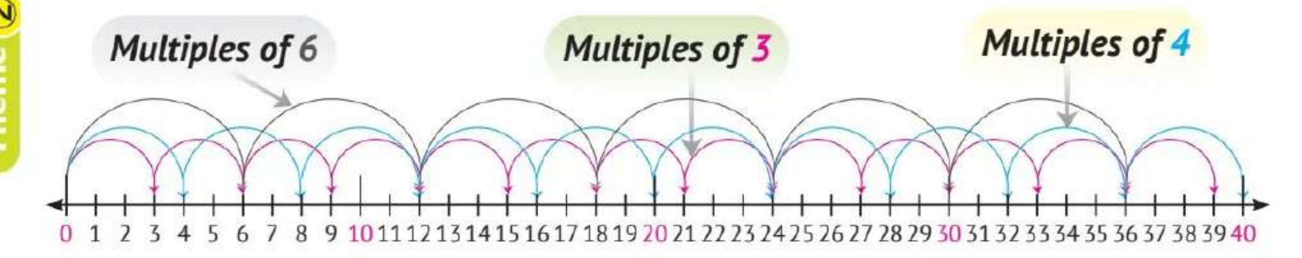
ⓑ Write 10 multiples of 6: 0, 6, 12, 18, 24, 30, 36, 42, 48, 54, 60.

ⓒ Write 5 multiples of 7: 0, 7, 14, 21, 28.

ⓓ Circle the numbers that are multiples of 9:

19, (27), (54), (99), 39, 42, (36), (45), 66, 78, 100

Ex. **Find the multiples of 3, 4 and 6 using skip counting on the number line:**



- The multiples of 3 are: 0, 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39.
- The multiples of 4 are: 0, 4, 8, 12, 16, 20, 24, 28, 32, 36, 40.
- The multiples of 6 are: 0, 6, 12, 18, 24, 30, 36.
- The common multiples of 3 , 4 and 6 are: 0, 12, 24, 36.

91	92	93	94	95	96	97	98	99	100
81	82	83	84	85	86	87	88	89	90
71	72	73	74	75	76	77	78	79	80
61	62	63	64	65	66	67	68	69	70
51	52	53	54	55	56	57	58	59	60
41	42	43	44	45	46	47	48	49	50
31	32	33	34	35	36	37	38	39	40
21	22	23	24	25	26	27	28	29	30
11	12	13	14	15	16	17	18	19	20
1	2	3	4	5	6	7	8	9	10

Key:

- The multiples of 3 (square)
- The multiples of 4 (circle)
- The multiples of 6 (yellow)

5 **Find the multiples of each of 2 and 3, up to 20. Then find the common multiples between them.**

– The multiples of 2 are: 0 , 2 , 4 , 6 , 8 , 10 , 12 , 14 , 16 , 18 , 20 .

– The multiples of 3 are: 0 , 3 , 6 , 9 , 12 , 15 , 18 .

– The **common multiples** of the two numbers are: 0, 6, 12, 18 .

6 **Find the multiples of each of 4 and 6, up to 30. Then find the common multiples between them.**

- The multiples of 4 are: 0 , 4 , 8 , 12 , 16 , 20 , 24 , 28 .
- The multiples of 6 are: 0 , 6 , 12 , 18 , 24 .
- The common multiples of the two numbers are: 0, 12, 24 .

7 **Find the two common multiples between each of the following:**

a) 4 and 8: 8 and 16

b) 2 and 5: 10 and 20

c) 6 and 8: 24 and 48

d) 7 and 6: 42 and 84

- The **product** of any **two numbers** is **a common multiple** of **them**.

8 **Complete:**

a) The common multiples of 2 and 5 are:

0 , 10 , 20 , 30 , 40 , 50 , 60 , 70 .

b) The common multiples of 3 and 4 are:

0 , 12 , 24 , 36 , 48 , 60 , 72 , 84 .

c) The common multiples of 6 and 8 are:

0 , 24 , 48 , 72 , 96 , 120 .

Remember

- **From this figure:**

4 and 7 are factors of 28 & **28 is a multiple of 4 and 7**

9 Complete the following:

ⓐ If 35 = 5 x 7, then { 35 is a multiple of the two numbers 5 and 7
5 and 7 are factors of the number 35 .

ⓑ If 48 = 6 x 8, then { 48 is a multiple of the two numbers 6 and 8,
6 and 8 are factors of the number 48 .

ⓒ An **even** number is a multiple of 3, 4 and 6 and lies between 20 and 30. The number is 24 .

ⓓ An **odd** number is a multiple of 3 and 9 and lies between 20 and 40. The number is 27 .

ⓔ The relationship between 2, 3 and 6 is that 2 and 3 are factors of 6 or 6 is a multiple of 2,3 .

10

1 Complete the following:

ⓐ Write 5 multiples of 6: (6 , 12 , 18 , 24 , 30)

ⓑ Write two common multiples of 8 and 6: (24 , 48)

ⓒ The relationship between 2, 4, 8 is that 2 and 4 are factors of 8 or 8 is a multiple of 2 and 8 .

2 Choose the correct answer:

ⓐ 16 is a multiple of 8. (2 or 16 or 12 or 9)

ⓑ 24 is a common multiple of 8 and 3. (15 or 32 or 24 or 27)

ⓒ If 4 X 5 = 20, then 20 is a multiple for 4 and 5.
(difference or multiple or factor or sum)

3 Find the multiples of each of 4 and 6, up to 30. Then find the common multiples between them:

ⓐ The multiples of 4 are: 0 , 4 , 8 , 12 , 16 , 20 , 24 , 28 .

ⓑ The multiples of 6 are: 0 , 6 , 12 , 18 , 24 , 30 .

ⓒ The common multiples of the two number are: 0 , 12 , 24 .

Multiplying by 1-Digit and 2-Digit Numbers

The Area Model Strategy

Learning Objectives:

By the end of this lesson, the student will be able to:

- Use an area model to represent two-digit by one-digit multiplication.
- Explain how he/she uses place value to multiply.

The Distributive Property

Learning Objectives:

By the end of this lesson, the student will be able to:

- Use an area model to multiply a one-digit number by a whole number with up to four digits.
- Explain the Distributive Property of Multiplication.
- Apply the Distributive Property of Multiplication to multiply a one-digit number by a whole number with up to four digits.

The Partial Products Algorithm
Multiplying by a 1-Digit Number

Learning Objectives:

By the end of these lessons, the student will be able to:

- Use the partial products algorithm to multiply a one-digit number by a whole number with up to four digits.
- Estimate products.
- Use the standard algorithm to multiply a one-digit number by a whole number with up to four digits.

Multiplying a 2-Digit Number by a Multiple of 10

Learning Objectives:

By the end of this lesson, the student will be able to:

- Identify patterns when multiplying two multiples of 10.
- Multiply a two-digit number by a multiple of 10.
- Assess the reasonableness of an answer using estimation and mental math.

The Area Model Strategy

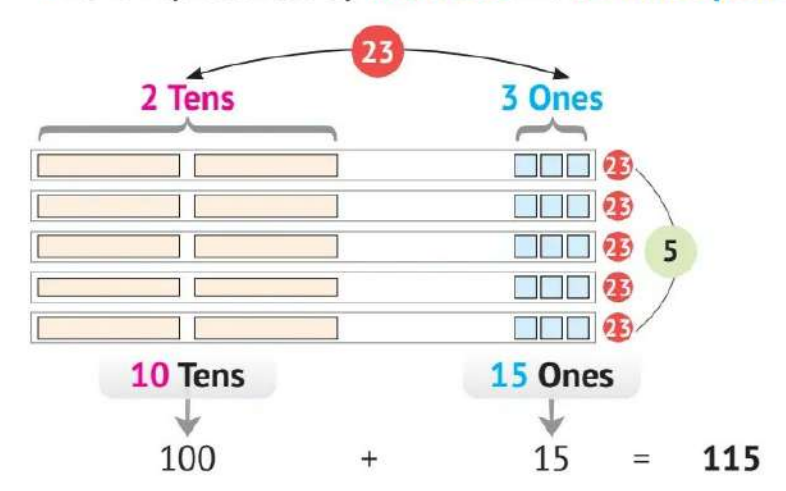
First: Base Ten Blocks:

When multiplying a 1-digit number by a 2-digit number,

- We represent the 2-digit number, the **Tens** with **lines** and the **Ones** with **small squares**.
- We **repeat** the number according to the 1-digit number.

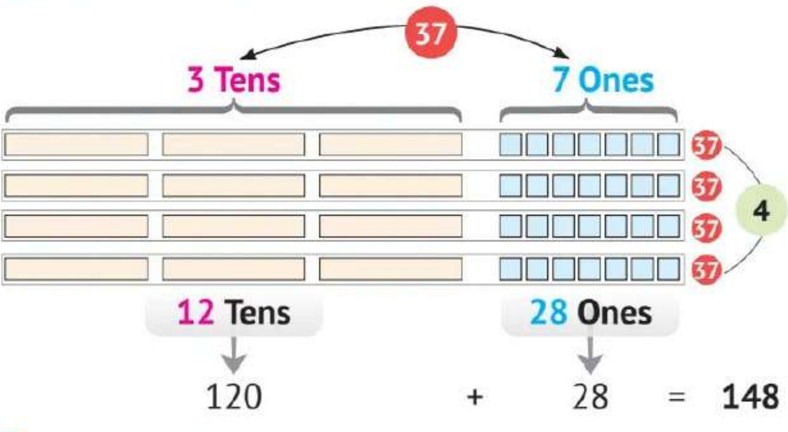
Ex. **Multiply: 23 X 5**

- 23 is represented by **two lines** and **5 small squares** repeated **5 times**, as follows:



So, 23 X 5 = 115

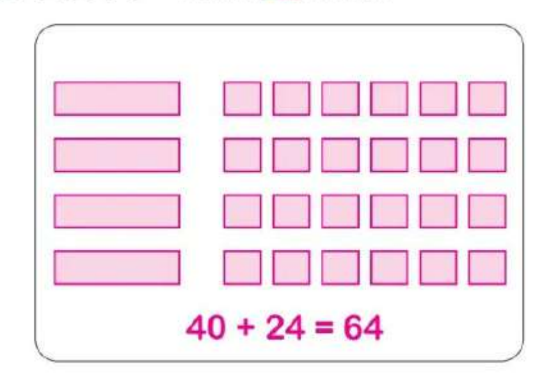
Multiply: 4 X 37



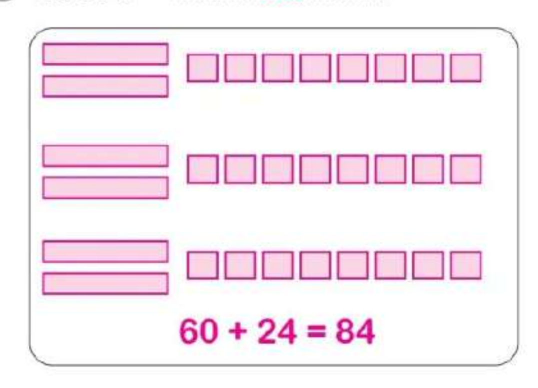
So, 4 X 37 = 148

1 Multiply using the Base Ten Blocks:

ⓐ 16 X 4 = 64



ⓑ 28 X 3 = 84



Second: Rectangle Area Model:

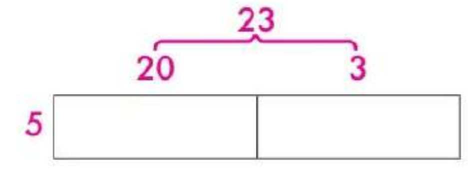
When multiplying a 1-digit number by a 2-digit number,

Ex. Multiply: 23 X 5

1

- Draw a rectangle and divide it into two parts by drawing a vertical line.

2



- Represent the 2-digit number on the long side and the 1-digit number on the short side.

3

	20	3
5	5 X 20 = 100	5 X 3 = 15

- Multiply the 1-digit number by both components of the other number.

4

	20	3
5	5 X 20 = 100	5 X 3 = 15

100 + 15 = 115

- Add the products of the multiplication to get the final result.

So, 23 X 5 = 115

Ex. Multiply: 6 X 78

6 X 78 = 468

	70	8
6	6 X 70 = 420	6 X 8 = 48

420 + 48 = 468

2 Use the rectangle area model to multiply:

ⓐ 5 X 24 = 120

	20	4
5	5 X 20 = 100	5 X 4 = 20

100 + 20

= 120

ⓑ 9 X 58 = 522

	50	8
9	9 X 50 = 450	9 X 8 = 72

450 + 72

= 522

ⓒ 67 X 4 = 268

	60	7
4	4 X 60 = 240	4 X 7 = 28

240 + 28

= 268

ⓓ 98 X 7 = 686

	90	8
7	7 X 90 = 630	7 X 8 = 56

630 + 56

= 686

3 A car travels 78 kilometers in one hour. How many kilometers will the car travel in 9 hours?

(Use the rectangle area model)

Number of kilometers

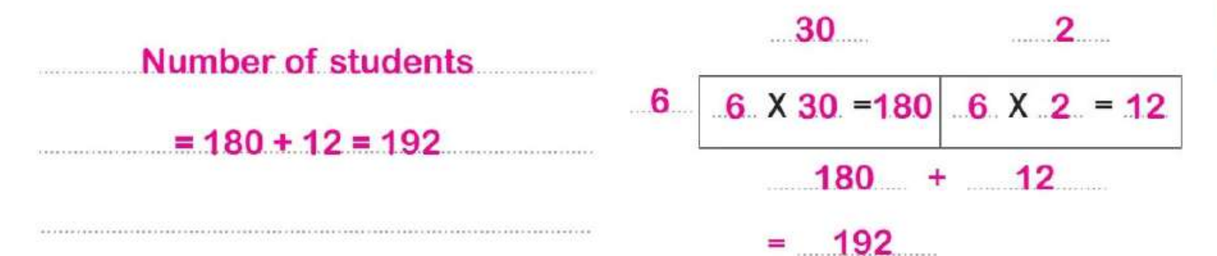
630 + 72 = 702 Km

	70	8
9	9 X 70 = 630	9 X 8 = 72

630 + 72

= 702

4 The school bus carries 32 students per trip. What is the maximum number of students that the bus can carry during 6 trips? (Use the rectangle area model)



Number of students

= 180 + 12 = 192

	30	2
6	6 X 30 = 180	6 X 2 = 12

180 + 12

= 192

/ 10

1 Use the rectangle area model to multiply:

	20	5
7	7 X 20 = 140	7 X 5 = 35

140 + 35 = 175

a) 25 X 7 = 175

	80	3
4	4 X 80 = 320	4 X 3 = 12

320 + 12 = 332

b) 83 X 4 = 332

2 Write the multiplication problem represented by each model and then find the product of the multiplication:

	20	7
4	4 X 20 = 80	4 X 7 = 28

80 + 28 = 108

a) 4 X 27 = 108

	50	3
9	9 X 50 = 450	9 X 3 = 27

450 + 27 = 477

b) 9 X 53 = 477

3 Salma saves 67 pounds per month. How many pounds does Salma save in 4 months? (Use the rectangle area model)

4 X 67 = 268

	60	7
4	4 X 60 = 240	4 X 7 = 28

240 + 28 = 268

Lesson 2 The Distributive Property

Remember

Expanded Form

56 = 50 + 6

729 = 700 + 20 + 9

3,729 = 3,000 + 700 + 20 + 9

95,392 = 90,000 + 5,000 + 300 + 90 + 2

The Distributive Property of Multiplication

Learn The distributive property is used to facilitate the multiplication process by decomposing the largest number in the expanded form.

Ex. 6 X 53

= 6 X (50 + 3)
= (6 X 50) + (6 X 3)
= 300 + 18 = 318

Ex. 3 X 425

= 3 X (400 + 20 + 5)
= (3 X 400) + (3X 20) + (3X5)
= 1,200 + 60 + 15 = 1,275

Ex. 5 X 2,146

= 5 X (2,000 + 100 + 40 + 6)
= (5 X 2,000) + (5 X 100) + (5 X 40) + (5 X 6)
= 10,000 + 500 + 200 + 30 = 10,730

1 Use the Distributive Property to solve the following problems:

a) 4 X 32 = 4 X (30 + 2)
= (4 X 30) + (4 X 2)
= 120 + 8 = 128

b) 6 X 374 = 6 X (300 + 70 + 4)
= (6 X 300) + (6 X 70) + (6 X 4)
= 1,800 + 420 + 24 = 2,244

c) 9 X 5,234 = 9 X (5,000 + 200 + 30 + 4)

= (9 X 5,000) + (9 X 200) + (9 X 30)

+ (9 X 4)

= 45,000 + 1,800 + 270 + 36 = 47,106

---

d) 4 X 2,687 = 4 X (2,000 + 600 + 80 + 7)

= (4 X 2,000) + (4 X 600) + (4 X 80)

+ (4 X 7)

= 8,000 + 2,400 + 320 + 28 = 10,748

Using the Rectangle Area Model to Multiply a 1-Digit-Number by a Whole Number up to 4 Digits

Ex.

Multiply: 8 X 245

- Draw a rectangle and divide it into 3 parts.
- Decompose the number 245 into **(200 + 40 + 5)**

8 X 245 = 1,960

	200	40	5
8	8 X 200 = 1,600	8 X 40 = 320	8 X 5 = 40

1,600 + 320 + 40 = 1,960

Ex.

Multiply: 7 X 6,312

7 X 6,312 = 44,184

	6,000	300	10	2
7	7 X 6,000 = 42,000	7 X 300 = 2,100	7 X 10 = 70	7 X 2 = 14

42,000 + 2,100 + 70 + 14 = 44,184

Theme 2

2 Use the rectangle area model to solve the following problems:

ⓐ 8 X 375 = 3,000

	300	70	5
8	2,400	560	40

2,400 + 560 + 40 = 3,000

ⓑ 9 X 216 = 1,944

	200	10	6
9	1,800	90	54

1,800 + 90 + 54 = 1,944

ⓒ 3 X 6,475 = 19,425

	6,000	400	70	5
3	18,000	1,200	210	15

18,000 + 1,200 + 210 + 15 = 19,425

ⓓ 4,962 X 8 = 39,696

	4,000	900	60	2
8	32,000	7,200	480	16

32,000 + 7,200 + 480 + 16 = 39,696

3 The length of a car is 245 cm, how long are 4 cars?

(Use the rectangle area model)

980 cm.

	200	40	5
4	800	160	20

800 + 160 + 20 = 980 cm.

___ / 10

1 Complete the following:

ⓐ 4 X (80 + 9) = (4 X 80) + (4 X 9)

ⓑ 6 X (500 + 30 + 7) = (6 X 500) + (6 X 30) + (6 X 7)

ⓒ 9 X (30 + 4) = (9 X 30) + (9 X 4)

2 Use the Distributive Property to solve the following problems:

ⓐ 3 X 67 = (3 X 60) + (3 X 7) = 180 + 21 = 201

ⓑ 8 X 403 = (8 X 400) + (8 X 3) = 3,200 + 24 = 3,224

ⓒ 4 X 247 = (4 X 200) + (4 X 40) + (4 X 7) = 800 + 160 + 28 = 988

3 Hisham bought 8 kg of oranges, the price of one kilogram was 890 piastres. How much did Hisham pay for the oranges?

(Use the Distributive Property)

8 X 890 = 8 X (800 + 90) = 8 X 800 + 8 X 90 = 6,400 + 720 = 7,120 piasters

4 Complete using the following area model to complete:

(6 X 800) + (6 X 40) + (6 X 3)

= 4,800 + 240 + 18 = 5,058

	800	40	3
6	4,800	240	18

The Partial Products Algorithm
Multiplication by a 1-Digit number

The Partial Products Algorithm

Each arithmetic operation is a "part" of a larger product.

Ex. **Multiply: 328 X 7**

Answer: ***Expand the largest number:***

(328 = 300 + 20 + 8)

	328	
	X 7	
Step 1 ▶ Multiply the 1-digit number by the Hundreds.	+ 2,100	(300 X 7)
Step 2 ▶ Multiply the 1-digit number by the Tens.	+ 140	(20 X 7)
Step 3 ▶ Multiply the 1-digit number by the Ones.	+ 56	(8 X 7)
Step 4 ▶ Add the products of the Hundreds, Tens and Ones.	2,296	

Ex. **Multiply: 83 X 9**

83	
X 9	
720	(80 X 9)
+ 27	(3 X 9)
747	

Ex. **Multiply: 3,702 X 6**

3,702	
X 6	
+ 18,000	(3,000 X 6)
+ 4,200	(700 X 6)
+ 12	(2 X 6)
22,212	

1 Use the partial products algorithm to multiply:

a 256 X 8 = 2,048

```
  256
X   8
-----
 1,600   (200 X 8)
+  400   (40 X 8)
+   48   (6 X 8)
-----
 2,048
```

b 3,986 X 6 = 23,916

```
  3,986
X     6
-------
 18,000   (3,000 X 6)
+ 5,400   (900 X 6)
+   480   (80 X 6)
+    36   (6 X 6)
-------
 23,916
```

c 63 X 9 = 567

```
   63
X   9
-----
  540   (60 X 9)
+  27   (3 X 9)
-----
  567
```

d 702 X 8 = 5,616

```
   702
X    8
------
 5,600   (700 X 8)
+   16   (2 X 8)
------
 5,616
```

e 125 X 4 = 500

```
   125
X    4
------
   400   (100 X 4)
+   80   (20 X 4)
+   20   (5 X 4)
------
   500
```

f 9 X 8,465 = 76,185

```
  8,465
X     9
-------
 72,000   (8,000 X 9)
+ 3,600   (400 X 9)
+   540   (60 X 9)
+    45   (5 X 9)
-------
 76,185
```

Similarities in Models

Ex. Multiply: 162 X 8

• **Estimate the product**, use the **rectangle area model** and the **partial products algorithm**.

Product Estimation	Rectangle Area Model	Partial Products Algorithm
Estimation: 200 X 8 = 1,600 (Use Rounding) to the nearest hundred	100 60 2 8 | 8X100=800 | 8X60=480 | 8X2=16 | **800 + 480 + 16** **= 1,296**	162 X 8 800 (100 X 8) + 480 (60 X 8) + 16 (2 X 8) 1,296

2 Complete the following table:

Problem	Product Estimation	Rectangle Area Model	Partial Products Algorithm
a 237 X 6 = 1,422	200 X 6 = 1,200	200 30 7 6 | 1,200 | 180 | 42 | = 1,422	237 X 6 1,200 (200 X 6) + 180 (30 X 6) + 42 (7 X 6) 1,422
b 7,425 X 9 = 66,825	7,000 X 9 = 63,000	7,000 400 20 5 9 | 63,000 | 3,600 | 180 | 45 | = 66,825	7,425 X 9 63,000 (7,000 X 9) + 3,600 (400 X 9) + 180 (20 X 9) + 45 (5 X 9) 66,825

The Standard Multiplication Algorithm

Follow the steps below to multiply 132 x 8 using the standard multiplication algorithm:

1. Write the numbers vertically with the largest number on top.
2. Start by multiplying the Ones (8 Ones x 2 Ones = 16 Ones).
3. Write 6 in the Ones place below the line.
4. Write 1 representing 1 Ten above 3 (this is called regrouping). **Keep 1**
5. Next, multiply the Tens (8 Ones x 3 Tens = 24 Tens).
6. Add the 1 Ten (from the previous step) to 24 Tens to get 25 Tens.
7. Write 5 in the Tens place below the line.
8. Regroup by writing 2 representing 2 Hundreds above the 2 in the Hundreds place. **Keep 2**
9. And finally, multiply the Hundreds (8 Ones x 1 Hundred = 8 Hundreds).
10. Add the 2 Hundreds (from the previous step) to 8 Hundreds to get 10 Hundreds.
    10 Hundreds = one thousand.
    Write 0 in the Hundreds place and 1 in the Thousands place below the line.

```
    2 1
    1 3 2
X       8
---------
        6
+     5 0
+ 1,0 0 0
---------
  1,0 5 6
```

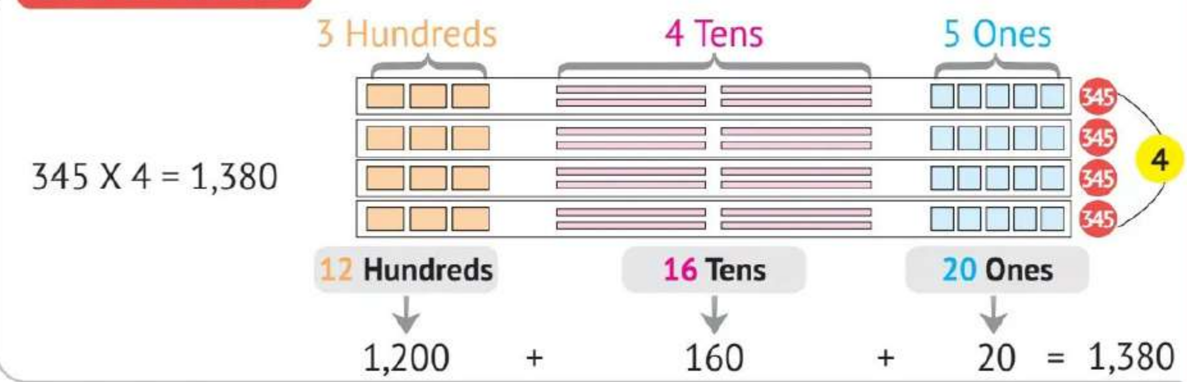
3 Use the standard multiplication algorithm to multiply:

a) 48 X 7 = 336	b) 324 X 6 = 1,944	c) 3,248 X 9 = 29,232
d) 36 X 6 = 216	e) 298 X 4 = 1,192	f) 7,866 X 5 = 39,330

Strategies for Multiplying a One-digit Number by a Whole Number Up to Four Digits

Base Ten Blocks

345 X 4 = 1,380



1,200 + 160 + 20 = 1,380

Rectangle Area Model

345 X 4 = 1,380

	300	40	5
4	4 X 300 = 1,200	4 X 40 = 160	4 X 5 = 20

1,200 + 160 + 20 = 1,380

Distributive Property

4 X 345 = 4 X (300 + 40 + 5)
= (4 X 300) + (4 X 40) + (4 X 5)
= 1,200 + 160 + 20 = 1,380

Standard Multiplication Algorithm

```
   ①②
   345
X    4
------
     0
+   80
+1,300
------
 1,380
```

Partial Products Algorithm

```
   345
X    4
------
 1,200  ( 300 X 4 )
+  160  ( 40  X 4 )
+   20  ( 5   X 4 )
------
 1,380
```

Unit 7

/ 10

1 Choose the correct answer:

ⓐ 6,000 + 300 + 8 = 6,308 (638 or 6,038 or 6,308 or 6,380)

ⓑ 3 X 5,020 = 5 X 3,012 (< or = or >)

ⓒ (30 X 4) + (8 X 4) = ... (38 X 44 or 308 X 4 or 38 X 4 or 38 X 40)

2 Solve using the partial products algorithm:

ⓐ 29 X 4 = 116

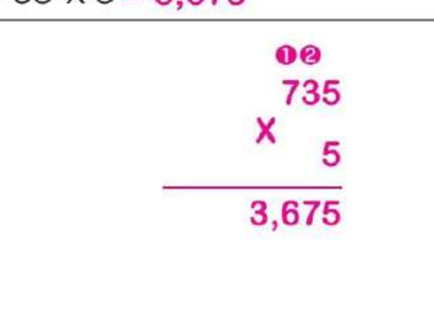
29
X 4
80 (20 X 4)
+ 36 (9 X 4)
116

ⓑ 5 X 207 = 1,035

207
X 5
1,000 (200 X 5)
+ 35 (7 X 5)
1,035

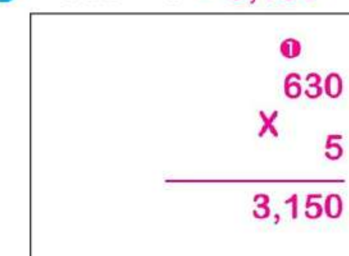
3 Solve using the standard algorithm:

ⓐ 735 X 5 = 3,675



735
X 5
3,675

ⓑ 630 X 5 = 3,150



630
X 5
3,150

4 The day is 24 hours, how many hours are there in 9 days?

24 X 9 = 216 hours

Lesson 5 Multiplying a 2-Digit Number by a Multiple of 10

Multiplying a 2-Digit Number by a Multiple of 10

Ex. Multiply: 62 X 30

First: Using the rectangle area model:

62 X 30 = 1,860

	60	2
30	30 X 60 = 1,800	30 X 2 = 60

1,800 + 60 = 1,860

Second: Using the Distributive Property:

62 X 30 = (60 + 2) x 30
= (60 X 30) + (2 X 30)
= 1,800 + 60
= 1,860

Third Using the Partial Products Algorithm:

```
    6 2
X   3 0
-------
1,8 0 0   ( 60 X 30)
+   6 0   ( 2  X 30)
-------
1,8 6 0
```

1 Use the rectangle area model to multiply:

ⓐ 48 X 20 = 960

	40	8
20	800	160

800 + 160 = 960

ⓑ 40 X 74 = 2,960

	70	4
40	2,800	160

2,800 + 160 = 2,960

2 Use the partial products algorithm to multiply:

ⓐ 35 X 80 = 2,800

```
      35
X     80
-----------------
   2,400   (30 X 80)
+    400   (5  X 80)
-----------------
   2,800
```

ⓑ 70 X 82 = 5,740

```
      82
X     70
-----------------
   5,600   (80 X 70)
+    140   (2  X 70)
-----------------
   5,740
```

3 Use the partial products algorithm to multiply:

ⓐ 90 X 85 = 7,650

```
      85
X     90
-----------------
   7,200   (80 X 90)
+    450   (5  X 90)
-----------------
   7,650
```

ⓑ 27 X 30 = 810

```
      27
X     30
-----------------
     600   (20 X 30)
+    210   (7  X 30)
-----------------
     810
```

Ex.

1 24 X 30 = 720

4 Multiply:

ⓐ 15 X 30 = 450

ⓑ 14 X 50 = 700

ⓒ 42 X 20 = 840

ⓓ 60 X 40 = 2,400

10

1 Choose the correct answer:

a) 80 X 12 = ...960.... (8,160 or 80 or 960 or 96)

b) 60 X 50 = ...3,000.... (30 or 300 or 3,000 or 1,100)

c) 25 X 80 ....>.... 205 X 8 (< or = or >)

2 Use the area model to solve:

a) 60 X 18 = 1,080

	10	8
60	600	480

600 + 480 = 1,080

b) 23 X 40 = 920

	20	3
40	800	120

800 + 120 = 920

3 Use the Distributive Property to solve:

a) 80 X 25 = (...80... X ...20...) + (...80... X ...5...)

= ...1,600... + ...400... = ...2,000...

b) 20 X 68 = (...20... X ...60...) + (...20... X ...8...)

= ...1,200... + ...160... = ...1,360...

4 If the month is 30 days, how many days are there in 24 months?

30 X 24 = 720 days

Multiplication and Division: Computation and Relationships

Dividing by 1-Digit Divisors

Exploring Remainders
Patterns in Division

Learning Objectives:

By the end of these lessons, the student will be able to:

- Identify the dividend, divisor and quotient of a division problem.
- Solve division problems.
- Explain what a remainder represents in a division problem.
- Use place value, multiplication facts and patterns with zeros to divide multiples of 10, 100, and 1,000 by one-digit divisors.

The Area Model and Division

Learning Objective:

By the end of this lesson, the student will be able to:

- Use rectangle area models to represent and solve division problems.

The Partial Quotients Algorithm

Learning Objective:

By the end of this lesson, the student will be able to:

- Use the partial quotients algorithm to divide dividends with up to 4 digits by one-digit divisors.

The Standard Division Algorithm
Division and Multiplication

Learning Objectives:

By the end of these lessons, the student will be able to:

- Estimate quotients using place value and patterns in multiplication and division.
- Use the standard algorithm to solve division problems.
- Use properties of place value to accurately record quotients.
- Use multiplication to check answers to division problems.
- Organize information in story problems to determine when to add, subtract, multiply, or divide.

I ♥ Math

Exploring Remainders
Patterns in Division

Here are three story problems to be read carefully:

There are 72 students at the playground. We need to divide the students into 8 teams. How many students are there in each team?

Solution:

$72 \div 8 = 9$ students

There are 72 students at the playground. We need to divide the students into teams, so that each team includes 9 students. How many teams can be formed?

Solution:

$72 \div 9 = 8$ teams

72 ÷ 8 ÷ 9 ×

There are 8 teams playing football, and each team has 9 players. How many students are there in each team?

Solution:

$8 \times 9 = 72$ students

From the above:

- The numbers are the same, and the problems are all about equal teams. However, you can use different operations to solve each of these problems.
- Multiplication: things are already in equal groups.
- Division: things must be divided into equal groups.

- **Salem brought 14 pies to give to four of his friends. How can Salem divide the pies evenly?**

The corresponding graph can be used to solve this problem.
When you divide the pies among his **four** friends, each person's share will be **3** pies, and the remaining pies will be **2**.

Solution: 14 ÷ 4 = 3 and the remainder is 2.

Dividend	Divisor	Quotient	Remainder
It is the number that is divided in the problem. (The sum of things)	The number of equal groups or the number in each group.	The solution of the division problem.	The remaining value after all things are divided equally.

Important Note:

1 **Complete the following table:**

Problem	Dividend	Divisor	Quotient	Remainder
ⓐ 25 ÷ 4	25	4	6	1
ⓑ 30 ÷ 6	30	6	5	0
ⓒ 28 ÷ 5	28	5	5	3
ⓓ 16 ÷ 5	16	5	3	1
ⓔ 15 ÷ 2	15	2	7	1

Theme 2

2 The swimming team will take a bus to go to the swimming competition. Each bus accommodates 40 students. 60 students will attend this competition.
How many buses are required to accommodate all students?
Will there be empty seats? And how many?

Solution: $60 \div 40 = 1$ R 20 Number of buses = 2.
Number of empty seats = 40 – 20 = 20.

3 There are 48 mugs that need to be put in boxes and shipped.
Each box holds five cups.
How many boxes are needed to ship the mugs?

Solution: $48 \div 5 = 9$ R 3
Number of boxes = 10 boxes.

Dividing Multiples of 10, 100 and 1,000 by a 1-Digit number

When dividing multiples of 10, 100, and 1,000 by a one-digit number, we do the following:

Ex. Divide:

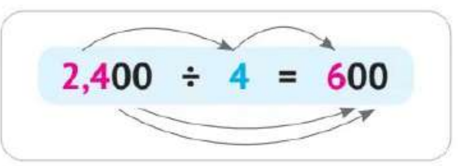
ⓐ $600 \div 3 =$ .... ⓑ $2,400 \div 4 =$ .... ⓒ $400 \div 5 =$ ....

Solution:

ⓐ To divide $600 \div 3$,
we note that: $3 \times 2 = 6$
So, $3 \times 20 = 60$, $3 \times 200 = 600$

600 ÷ 3 = 200

ⓑ To divide $2,400 \div 4$,
we note that: $4 \times 6 = 24$
So, $4 \times 60 = 240$, $4 \times 600 = 2,400$

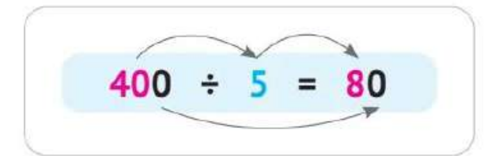


So, $2,400 \div 4 = 600$

Ⓒ To divide 400 ÷ 5,

we note that: 5 x 8 = 40

So, 5 x 80 = 400 , 400 ÷ 5 = 80



4 Complete the following table: (As in the example)

Equation	Related Fact	Quotient
Ex. 8,000 ÷ 4	8 ÷ 4 = 2	2,000
ⓐ 9,000 ÷ 3	9 ÷ 3 = 3	3,000
ⓑ 15,000 ÷ 5	15 ÷ 5 = 3	3,000
ⓒ 28,000 ÷ 4	28 ÷ 4 = 7	7,000
ⓓ 3,000 ÷ 5	30 ÷ 5 = 6	600

5 Find the quotient of:

ⓐ 2,400 ÷ 8 = 300

ⓑ 2,000 ÷ 4 = 500

ⓒ 10,000 ÷ 5 = 2,000

ⓓ 3,000 ÷ 6 = 500

6 8,100 workers need to go to work on Monday morning at 7:00 am, and they all want to go by metro. Each metro train consists of 9 cars. If every car accommodates 90 people, can all workers ride the same metro to go to work?

(Explain your ideas using numbers, words, and symbols)

9 × 90 = 810.

All workers can't ride the same metro.

7 Malik wanted to make Falafel. He bought 360 beans from the store. He read that he would need 6 beans for each Falafel patty. How many Falafel patties can he make with all the beans?

360 ÷ 6 = 60 patties.

8 There are 540 colored pencils in a large basket. The pupils were asked to put 9 crayons in a small box for each pupil. How many small boxes will the pupils need to complete this task?

$540 \div 9 = 60$ boxes.

Score: ___ / 10

1 Choose the correct answer:

a) 3,200 ÷ **8** = 400 (8 or 80 or 800 or 8,000)

b) If 8 X 3 = 24, then 24,000 ÷ 8 = **3,000** (3 or 30 or 300 or 3,000)

c) 4,800 ÷ 6 **<** 64,000 ÷ 8 (< or = or >)

2 Use the area model to solve:

a) If 5 X 8 = 40, then 400 ÷ 5 = **80**

b) If 6 X 7 = 42, then **4,200** ÷ 6 = 700

c) The remainder of 38 ÷ 5 is **3**

3 The week is 7 days, how many weeks are there in 2,100 days?

$2,100 \div 7 = 300$ weeks

4 A teacher has 18 pens and wants to distribute them equally among 6 students. How many pens will each student get?

$18 \div 6 = 3$ pens

The Area Model and Division

Rectangle Area Model for Representing and Solving Division Problems

This strategy can be understood through the following examples.

Divide 96: ÷ 5

First:

Draw a long rectangle and write "5" to the left side of the rectangle.

5	

Second:

Draw a vertical line inside the rectangle and write in the left part "5 x 10 = 50" (as the divisor is two digits).
And write under this part "10".

5	5 X 10 = 50	
	10	

Third:

By subtracting 96 (the dividend) – 50 = 46.
Divide: 46 ÷ 5 = 9
and the remainder is 1.

5	5 X 10 = 50	5 X 9 = 45
	10	9

Write "5 x 9 = 45" in the remaining part of the rectangle and write "9" under this part of the rectangle.

Fourth:

Add: 9 + 10 = 19 (Quotient).

So, 96 ÷ 5 = 19 and the remainder is 1

The solution can be verified by multiplying the quotient by the divisor and then adding the remainder, if any, to get the dividend.

Verification:

19 x 5 = 95 , 95 + 1 = 96 (the dividend)

Ex. **Use the rectangle area model to divide 919 ÷ 4:**

Hundreds:

There is 9 in the Hundreds place = 900
9 Hundreds ÷ 4 = 2 Hundreds.
The related fact is 4 X 200 = 800.
The remainder = 919 – 800 = 119

4	4 X 200 = 800		
	200		

Tens:

4 X 10 = 40,

40 is much smaller than 119

4 X 20 = 80

4 X 30 = 120,
120 is more than 119.
So, 80 is the closest value to 119.
119 – 80 = 39

4	4 X 200 = 800	4 X 20 = 80	
	200	20	

Ones:

4 X 9 = 36
36 is the closest value to 39.
39 – 36 = 3 **(3 is the remainder)**
The quotient = 200 + 20 + 9 = 229

4	4 X 200 = 800	4 X 20 = 80	4 X 9 = 36
	200	20	9

So, 919 ÷ 4 = 229 and the remainder is 3

Verification:

229 x 4 = 916 , 916 + 3 = 919 (the dividend)

Ex. Use the rectangle area model to divide 156 ÷ 6:

Hundreds:

You can't use 6 X 100 = 600.

Because: 600 > 156

Tens:

6 X 10 = 60,

60 is much smaller than 150.

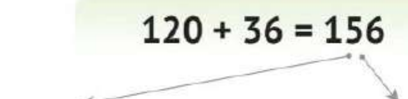
6 X 20 = 120

6 X 30 = 180,

180 is more than 150.

So, 120 is the closest value to 156.

156 – 120 = 36



20 6

20 + 6 = 26 (Quotient)

Ones:

6 X 6 = 36

36 – 36 = 0 (No remainder)

So, 156 ÷ 6 = 26

Verification:

26 x 6 = 156 (the dividend)

1 **Find the quotient in each of the following: (Use the rectangle area model)**

ⓐ 84 ÷ 6

6	6 X 10 = 60	6 X 4 = 24
	10	4

84 - 60 = 24 - 24 = 0

84 ÷ 6 = 14

ⓑ 90 ÷ 4

4	4 X 20 = 80	4 X 2 = 8
	20	2

90 - 80 = 10 - 8 = 2

90 ÷ 4 = 22 R2

c) 457 ÷ 3 = 152 R1

457 - 300 = 157

157 - 150 = 7

7 - 6 = 1

3	3 X 100 = 300	3 X 50 = 150	3 X 2 = 6
	100	50	2

152 R1

d) 3,200 ÷ 8 = 400

3,200 ÷ 8 = 400

2 Sarah saved 868 coins last year. She wanted to put them in 8 pots. How many coins will she put in each pot?

(Use the rectangle area model to solve, show your steps)

868 - 800 = 68

68 - 64 = 4

8	8 X 100 = 800	8 X 8 = 64
	100	8

868 ÷ 8 = 108 R4.

3 There are 492 cars that need to use the parking lot in the stadium. The stadium includes 4 parking lots. Each parking lot must contain the same number of cars evenly.

How many cars are there in each parking lot?

(Use the rectangle area model to solve, show your steps)

492 - 400 = 92

92 - 80 = 12

12 - 12 = 0

4 X 100 = 400	4 X 20 = 80	4 X 3 = 12
100	20	3

492 ÷ 4 = 123 cars.

Unit 7

10

1 Choose the correct answer:

3	3 X 100 = 300	3 X 5 = 15
	100	5

a The problem that represents the opposite area model is **315 ÷ 3**

(315 ÷ 3 or 305 ÷ 3 or 103 ÷ 3 or 618 ÷ 3)

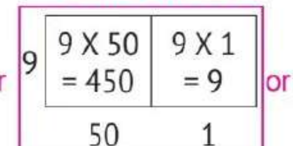
b The model that represents 459 ÷ 9 is: **third model**

9	9 X 5 = 45	9 X 1 = 9
	5	9

or

9	9 X 50 = 450	9 X 10 = 90
	50	10

or



9	9 X 50 = 450	9 X 1 = 9
	50	1

or

9	9 X 5 = 45	9 X 10 = 90
	5	10

c 98 ÷ 4 = **24 R2**

(24 R1 or 24 R2 or 24 R3 or 23 R2)

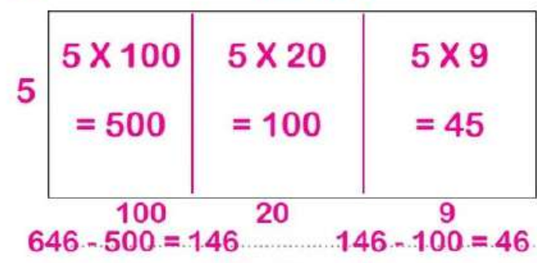
2 Find the quotient and complete the rectangle area model:

a 67 ÷ 3 **= 22 R 1**

3	3 X 20 = 60	3 X 2 = 6
	20	2

67 - 60 = 7 7 - 6 = 1

b 646 ÷ 5 **= 129 R 1**



5	5 X 100 = 500	5 X 20 = 100	5 X 9 = 45
	100	20	9

646 - 500 = 146 146 - 100 = 46

46 - 45 = 1

3 Mona bought 7 kg of meat and she paid 2,135 pounds. What is the price of 1 kg of meat?

7	7 X 300 = 2100	7 X 5 = 35
	300	5

2,135 ÷ 7 = 305 pounds

4 Sama walked 824 meters in 8 minutes, so she walked the same distance every minute. What distance do you walk in one minute?

8	8 X 100 = 800	8 X 3 = 24
	100	3

824 ÷ 8 = 103 meters

The Partial Quotients Algorithm

The Partial Quotients Algorithm:

Divide: 897 ÷ 4

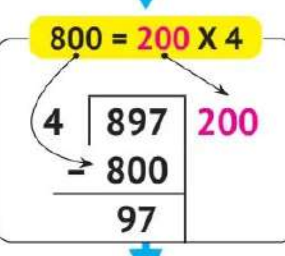
1

Draw the line as shown in the figure. Then, write the dividend on the **bottom** of the line and the **divisor** on the **left**.

Dividend
4 | 897
Divisor

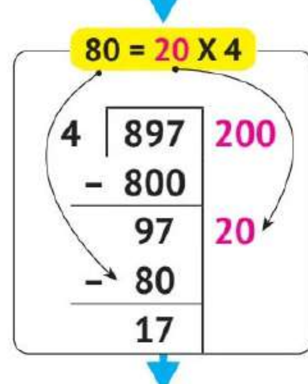
2

Start from the **left**, there are **8** in the Hundreds place. Notice that 800 is a multiple of 4, (4 x 200 = 800). Write **200** to the **right** of the line as shown. Then write **800 under 897**, then subtract.



3

Move to **97** (the difference). Find the nearest multiple of 4 to 97 (4 x 20 = 80); you can use another number. Write **20** to the **right** of the line, and write **80 below 97**, then subtract.



4

Move to **17** (the difference). The nearest multiple of 4 to 17 is 16 (4 x 4 = 16). Write **4** to the **right** of the line, write **16 under 17**, then subtract.

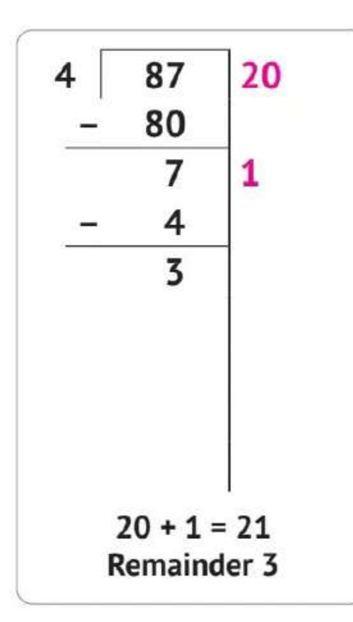
16 = 4 X 4
4 | 897 | 200
- 800
97 | 20
- 80
17 | 4
- 16
Remainder → 1

The quotient = 200 + 20 + 4 = 224

So, 897 ÷ 4 = 224 and the remainder is 1.

Ex. Divide:

ⓐ 87 ÷ 4



87 ÷ 4 = 21
and the remainder is 3

Verification:
4 x 21 = 84,
84 + 3 = 87

ⓑ 675 ÷ 5

5	675	100
–	500	
	175	30
–	150	
	25	5
–	25	
	0	

100 + 30 + 5 = 135

675 ÷ 5 = 135

Verification:
5 x 135 = 675

ⓒ 8,215 ÷ 3

3	8,215	2,000
–	6,000	
	2,215	700
–	2,100	
	115	30
–	90	
	25	8
–	24	
	1	

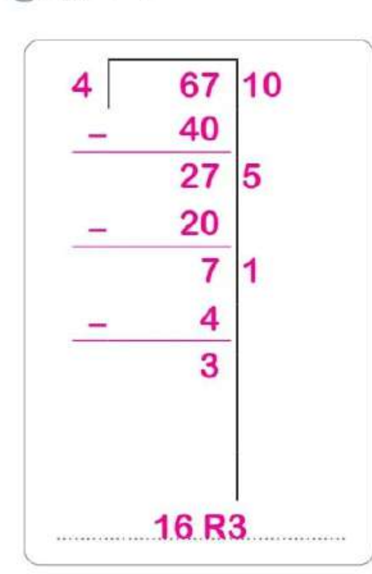
2,000 + 700 + 30 + 8
= 2,738 Remainder 1

8,215 ÷ 3 = 2,738
and the remainder is 1

Verification:
3 x 2,738 = 8,214,
8,214 + 1 = 8,215

1 Use the partial quotients algorithm to divide:

ⓐ 67 ÷ 4



ⓑ 84 ÷ 3

3	84	20
–	60	
	24	8
–	24	
	00	

28

ⓒ 625 ÷ 5

5	625	100
–	500	
	125	20
–	100	
	25	5
–	25	
	00	

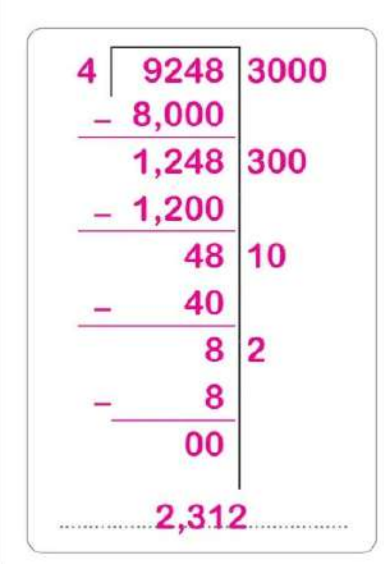
125

d 937 ÷ 4

4 | 937 | 200
− 800
137 | 5
− 120
37 | 9
− 36
1

234 R1

e 9,248 ÷ 4



4 | 9248 | 3000
− 8,000
1,248 | 300
− 1,200
48 | 10
− 40
8 | 2
− 8
00

2,312

f 6,278 ÷ 3

3 | 6,278 | 2,000
− 6,000
278 | 90
− 270
8 | 2
− 6
2

2,092 R2

2 A juice shop owner owns 480 cups. If the shop owner wants to use these cups for 3 months, how many cups should he use each month? (Using the partial quotients algorithm)

480 ÷ 3 = 160 cups.

3 | 480 | 100
− 300
180 | 60
− 180
000

160

3 One machine was used to make 1,026 cans of sugar-free soda and 5 times that number of regular soda cans over the course of 45 minutes. The regular soda cans were then placed in two shipping boxes, each containing the same number of soda cans. How many cans of regular soda are there in each shipping box?

1,026 × 5 = 5,130 cans.

5,130 ÷ 2 = 2,565 cans.

2 | 5,130 | 2,000
− 4,000
1,130 | 500
− 1,000
130 | 60
− 120
10 | 5
− 10
00

10

1 Choose the correct answer:

6 | 78 | 10
− 60
18 | 3
− 18
0

a The problem that represents the opposite partial division is **78 ÷ 6**

([78 ÷ 6] or 103 ÷ 6 or 78 ÷ 13 or 798 ÷ 6)

b The partial division that represents 956 ÷ 4 is: **third model**

(

4 | 956 | 200
− 800
156 | 30
− 120
36 | 8
− 32
4

or

4 | 956 | 100
− 400
556 | 90
− 360
190 | 45
− 180
10

or

[4 | 956 | 200
− 800
156 | 30
− 120
36 | 9
− 36
0]

or

4 | 956 | 200
− 800
156 | 20
− 80
76 | 9
− 36
40

)

c 105 ÷ 6 = **17 R 3** (3 R 17 or [17 R 3] or 18 R 1 or 16 R 3)

2 Use the partial division to solve:

a 345 students are divided among 5 classes. How many students are there in each class?

345 ÷ 5 = 69 students

5 | 345 | 60
- 300
45 | 9
- 45
00

b Doina bought 6 pens and she paid 72 pounds. What is the price of one pen?

72 ÷ 6 = 12 pounds

6 | 72 | 10
- 60
12 | 2
- 12
00

The Standard Division Algorithm
Division and Multiplication

Estimating Quotients

To estimate the quotient:

- We look for two numbers between which the dividend is limited and which are multiples of the divisor.
- We divide each of the two numbers by the divisor, so that the result of the division is limited to the quotient of the division of the two numbers.

Ex. **Estimate the quotient of:**

a **68 ÷ 4**

4 X 10 = 40
4 X 20 = 80

40 ÷ 4 = 10
68 ÷ 4
80 ÷ 4 = 20

68 is **between** 40 and 80.

So, the quotient is between **10** and **20.**

b **356 ÷ 4**

4 X 80 = 320
4 X 90 = 360

320 ÷ 4 = 80
356 ÷ 4
360 ÷ 4 = 90

356 is **between** 320 and 360.

So, the quotient is between **80** and **90.**

c **752 ÷ 3**

3 X 200 = 600
3 X 300 = 900

600 ÷ 3 = 200
752 ÷ 3
900 ÷ 3 = 300

752 is **between** 600 and 900.

So, the quotient is between **200** and **300.**

d **2,569 ÷ 3**

3 X 800 = 2400
3 X 900 = 2700

2,400 ÷ 3 = 800
2,569 ÷ 3
2,700 ÷ 3 = 900

3,569 is **between** 2,400 and 2,700.

So, the quotient is between **800** and **900.**

1 Complete the following table:

Problem	The dividend is between	The quotient is between
Ex. 45 ÷ 3	30 and 60	10 and 20
a 75 ÷ 3	60 and 90	20 and 30
b 845 ÷ 3	600 and 900	200 and 300
c 215 ÷ 4	200 and 240	50 and 60
d 4,256 ÷ 2	4,000 and 6,000	2,000 and 3,000
e 5,487 ÷ 4	4,000 and 8,000	1,000 and 2,000

The Standard Division Algorithm

Ex. Divide: 98 ÷ 4

First Step: Writing the problem:

$$4 \overline{)\,98}$$

- The dividend is written below the line and the divisor is written to the left of the division symbol.

Second Step: Division:

Divide and Write Up

$$\begin{array}{r} 2 \\ 4 \overline{)\,98} \end{array}$$

- Start with the number in the place with the highest value (on the left). You know that: 9 ÷ 4 = 2 and the remainder of the division is 1.
- Write 2 above the line, above 9.
- The remainder of the division will not be recorded this time.

Third Step: Multiplication:

Multiply and Write Down

$$\begin{array}{r} 2 \\ 4 \overline{)\,98} \\ 80 \end{array}$$

- The value of 2 is 20 because it is in the Tens place.
- Multiply: 20 x 4 = 80, then write 80 below 98.
- 80 is part of the dividend you divided.

Fourth Step: Subtraction:

Subtract and Bring Down Next Digit

```
     2
4 | 9 8
  - 8 0
  -----
    1 8
```

Subtract:

98 – 80 = 18

Write the result of the subtraction.

Fifth Step: Division:

Divide and Write Up

```
    2 4
4 | 9 8
  - 8 0
  -----
    1 8
```

- 18 is the new divisor.
- 18 ÷ 4 = 4 and the remainder is 2.
- Write 4 over 8 in the Ones place.

Sixth Step: Multiplication:

Multiply and Write Down

```
    2 4
4 | 9 8
  - 8 0
  -----
    1 8
    1 6
```

Multiply:

4 x 4 = 16.
Write 16 under 18.

Seventh Step: Subtraction:

Subtract

```
    2 4
4 | 9 8
  - 8 0
  -----
    1 8
  - 1 6
  -----
      2
```

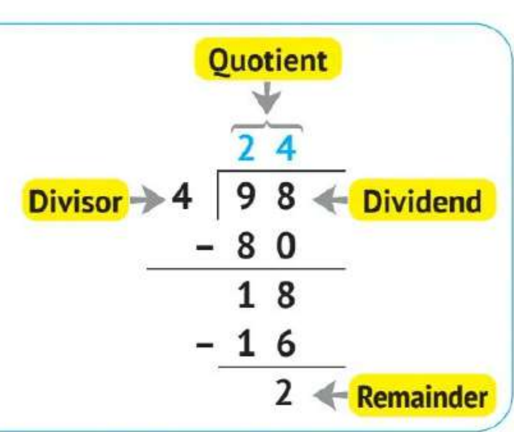
Subtract:

18 – 16 = 2

So, 98 ÷ 4 = 24 and the remainder is 2

From the above:

- There are three basic steps:
  (Division ⇨ Multiplication ⇨ Subtraction)
- These three steps are repeated according to the number of digits of the dividend.

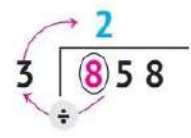


Ex. Divide: 858 ÷ 3

First Step: Writing the problem

$$3 \overline{)858}$$

Second Step: Division



$$\begin{array}{r} 2 \\ 3 \overline{)858} \end{array}$$

Third Step: Multiplication

$$\begin{array}{r} 2 \\ 3 \overline{)858} \\ 600 \end{array}$$

Fourth Step: Subtraction

$$\begin{array}{r} 2 \\ 3 \overline{)858} \\ -600 \\ \hline 258 \end{array}$$

Fifth Step: Division

$$\begin{array}{r} 28 \\ 3 \overline{)858} \\ -600 \\ \hline 258 \end{array}$$

Sixth Step: Multiplication

$$\begin{array}{r} 28 \\ 3 \overline{)858} \\ -600 \\ \hline 258 \\ 240 \end{array}$$

Seventh Step: Subtraction

$$\begin{array}{r} 28 \\ 3 \overline{)858} \\ -600 \\ \hline 258 \\ -240 \\ \hline 18 \end{array}$$

Eighth Step: Division

$$\begin{array}{r} 286 \\ 3 \overline{)858} \\ -600 \\ \hline 258 \\ -240 \\ \hline 18 \end{array}$$

Ninth Step: Multiplication

$$\begin{array}{r} 286 \\ 3 \overline{)858} \\ -600 \\ \hline 258 \\ -240 \\ \hline 18 \\ 18 \end{array}$$

Tenth Step: Subtraction

$$\begin{array}{r} 286 \\ 3 \overline{)858} \\ -600 \\ \hline 258 \\ -240 \\ \hline 18 \\ -18 \\ \hline 0 \end{array}$$

858 ÷ 3 = 286

2 Divide using the standard division algorithm:

ⓐ 65 ÷ 5 = 13

```
      13
5 |   65
 -    50
      15
 -    15
      00
```

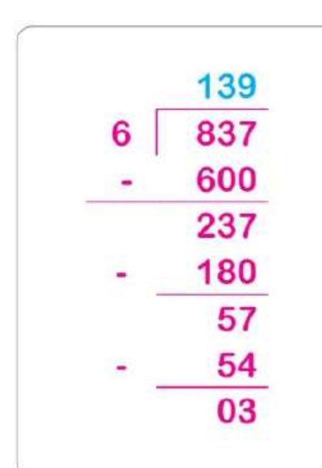
ⓑ 97 ÷ 4 = 24 R1

```
      24
4 |   97
 -    80
      17
 -    16
       1
```

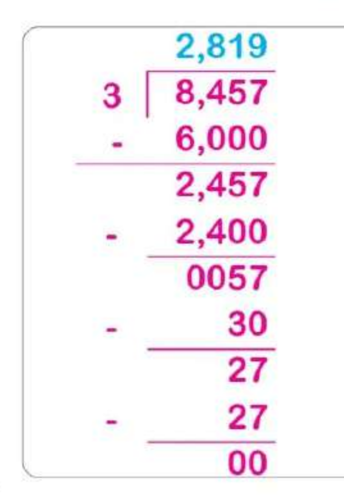
ⓒ 456 ÷ 3 = 152

```
      152
3 |   456
 -    300
      156
 -    150
      006
 -    006
      000
```

ⓓ 837 ÷ 6 = 139 R3



ⓔ 8,457 ÷ 3 = 2,819



ⓕ 9,807 ÷ 3 = 3,269

```
      3,269
3 |   9,807
 -    9,000
        807
 -      600
        207
 -      180
         27
 -       27
         00
```

3 The train has 784 passenger seats. If the train has 8 cars and each car has the same number of seats, how many passengers can be seated in each car?

(Solve the problem using at least two different strategies)

784 ÷ 8 = 98 passengers.

Follow the Standard Division Algorithm

Ex. Divide: 985 ÷ 4:

(Using the standard division algorithm)

The quotient will be **between** 200 and 300.

Because the divisor is between 800 and 1,200.

- **Follow the division steps:**

  Start by writing the problem, then (divide - multiply - subtract).

- These last three steps are **repeated according** to the **dividend**.

9 ÷ 4 = 2 Remainder 1

18 ÷ 4 = 4 Remainder 2

25 ÷ 4 = 6 Remainder 1

```
      2 4 6
   4 ┌─────
     │ 9 8 5
4 X 200 → − 8 0 0
           1 8 5
4 X 40  → − 1 6 0
             2 5
4 X 6   → −   2 4
               1
```

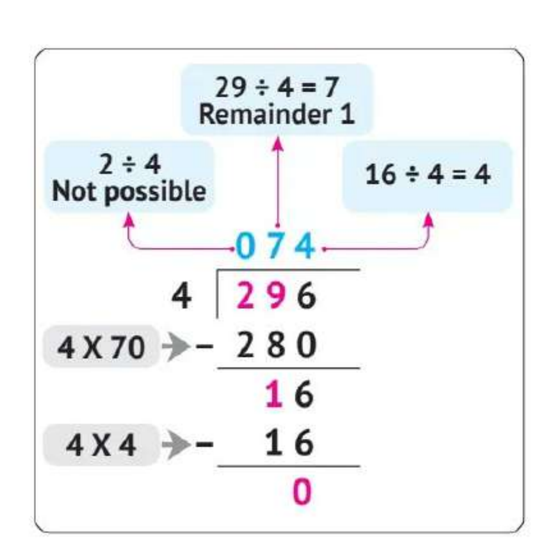
Check 246 x 4 = 984 , 984 + 1 = 985

Divide: 296 ÷ 4:

(Using the standard division algorithm)

The quotient will be **between** 0 and 100.

Because the divisor is between 0 and 400.



- **Note that:** When dividing 2 ÷ 4, division is **not possible** because 2 < 4. **So,** we divide 2 and 9 together (29 ÷ 4).
- **Note that:** If the division is not possible, **we add the number that cannot be divided to the next number.**
- **Note that:** 0 is written **above** the number that cannot be divided.

Check 74 x 4 = 296

Ex. **Divide: 856 ÷ 8:**

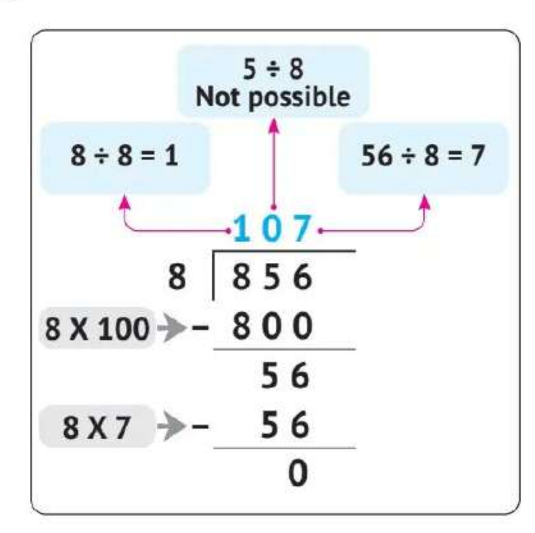
(Using the standard division algorithm)

The quotient will be **between** 100 and 200.

Because the divisor is between 800 and 1,600.

- **Note that:** When dividing 5 ÷ 8, division is **not possible** because 5 < 8.

  So, we divide 5 and 6 together (56 ÷ 8).



Check 107 x 8 = 856

- **Note that:** The number of digits of the **quotient** may be **equal** to or **less than** the number of digits of the **dividend**.

Ex.

- 7,856 ÷ 5 ⇨ Number of digits of the quotient is **4** digits.

  2,364 ÷ 5 ⇨ Number of digits of the quotient is **3** digits.

  Because: **2 ÷ 5 is not possible.**

---

4 **Complete the following table:**

	Problem	Number of Digits of the Quotient	The Quotient is between	Using the Standard Division Algorithm
Ex.	452 ÷ 4	3	100 and 200	113 4 | 452 − 400 52 − 40 12 − 12 0

Ex.	278 ÷ 6	2	0 and 100	046 6) 278 − 240 38 − 36 2
a	845 ÷ 5	3	100 and 200	169 5) 845 - 500 345 - 300 45 - 45 00
b	396 ÷ 6	2	60 and 70	66 6) 396 - 360 36 - 36 00
c	4,256 ÷ 7	3	600 and 700	608 7) 4256 - 4200 56 - 56 00
d	4,824 ÷ 8	3	600 and 700	603 8) 4824 - 4800 24 - 24 00

5 **Estimate the quotient and determine the number of digits of the quotient, then solve each problem using the standard division algorithm:**

ⓐ 576 ÷ 3 = 192

Number of digits of the quotient is 3 .

The quotient will be between 100 and 200 .

```
      192
 3 | 576
 -   300
     276
 -   270
     006
 -     6
      00
```

ⓑ 558 ÷ 6 = 93

Number of digits of the quotient is 2 .

The quotient will be between 90 and 100 .

```
       93
 6 | 558
 -   540
      18
 -    18
      00
```

6 **Kazem wants to travel from Cairo to Alexandria. The distance between the two cities is 219 km. Kazem plans to stop 3 times during his journey. After how many kilometers should he stop?**

219 ÷ 3 = 73 km.

___ / 10

1 Choose the correct answer:

a) If 108 X 4 = 432, then 432 ÷ 4 = 108

(432 ÷ 4 = 108 or 432 – 4 = 108 or 432 X 4 = 108 or 432 ÷ 4 = 180)

b) In the problem 135 ÷ 5, the quotient is between 20 and 30

(10 and 20 or 20 and 30 or 30 and 40 or 100 and 200)

c) 6,012 ÷ 3 = 2,004 (24 or 204 or 2,004 or 2,040)

2 Use the standard division algorithm to solve:

a) 945 ÷ 4 = 236 R 1

```
      236
  4 | 945
  -   800
      145
  -   120
       25
  -    24
        1
```

b) 607 ÷ 8 = 75 R 7

```
       75
  8 | 607
  -   560
       47
  -    40
        7
```

3 Use the standard algorithm to solve:

a) A teacher wants to divide the 315 students participating in the school trip into 7 buses. How many students will be in each bus?

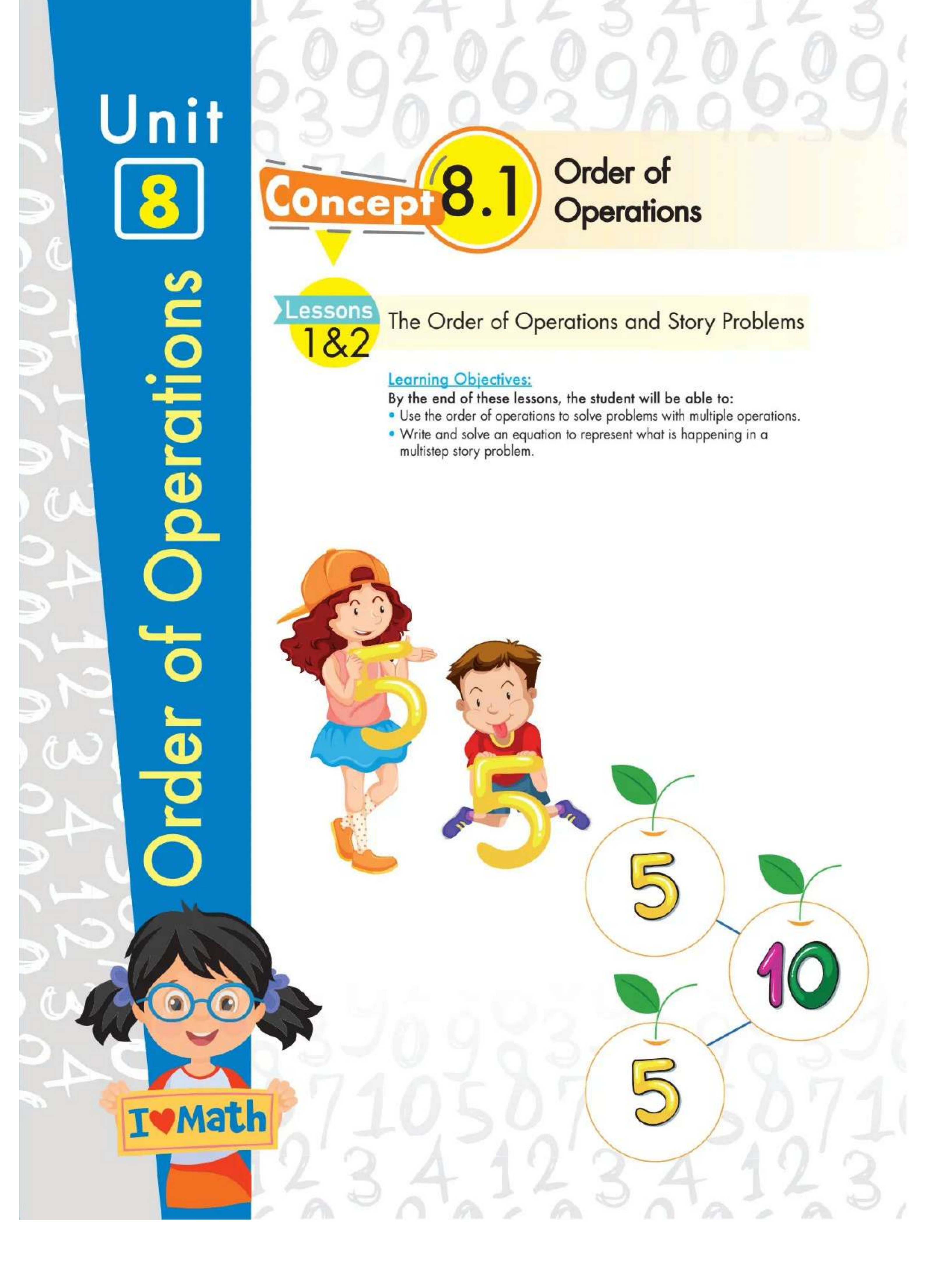
315 ÷ 7 = 45 students

```
       45
  7 | 315
  -   280
       35
  -    35
       00
```

b) Manal has 216 flower plants that she wants to plant in 9 rows in her garden. How many plants does she put in each row?

216 ÷ 9 = 24 plants

```
       24
  9 | 216
  -   180
       36
  -    36
       00
```



Unit 8 Order of Operations

Concept 8.1 Order of Operations

Lessons 1&2 The Order of Operations and Story Problems

Learning Objectives:

By the end of these lessons, the student will be able to:

- Use the order of operations to solve problems with multiple operations.
- Write and solve an equation to represent what is happening in a multistep story problem.

Lessons 1&2 The Order of Operations and Story Problems

Order of Operations Diagram

Parentheses → Multiplication and Division (From left to right) → Addition and Subtraction (From left to right)

First: Problems that contain addition and subtraction only:

- When a problem contains only addition and subtraction, we do operations from **left** to **right**.

Ex. $5 + 6 + 4$	Ex. $9 - 6 - 2$	Ex. $8 - 2 + 3$
$= 11 + 4$	$= 3 - 2$	$= 6 + 3$
$= 15$	$= 1$	$= 9$

Second: Problems that contain multiplication and division only:

- When a problem contains only multiplication and division, we do operations from **left** to **right**.

Ex. $5 \times 2 \times 4$	Ex. $18 \div 2 \div 3$	Ex. $24 \div 8 \times 2$
$= 10 \times 4$	$= 9 \div 3$	$= 3 \times 2$
$= 40$	$= 3$	$= 6$

Theme 2

1 Follow the order of operations to solve the following problems:

a) $12 + 2 + 8$ $= 14 + 8$ $= 22$	b) $12 - 5 - 2$ $= 7 - 2$ $= 5$	c) $9 + 8 - 2$ $= 17 - 2$ $= 15$
d) $12 - 2 + 5$ $= 10 + 5$ $= 15$	e) $24 \div 6 \div 4$ $= 4 \div 4$ $= 1$	f) $5 \times 6 \times 3$ $= 30 \times 3$ $= 90$
g) $9 \times 4 \div 6$ $= 36 \div 6$ $= 6$	h) $24 \div 8 \times 4$ $= 3 \times 4$ $= 12$	i) $5 \times 4 + 3$ $= 20 + 3$ $= 23$

Third: **Problems that contain two operations:**

- **One of them is multiplication or division, and the other is addition or subtraction:**
  - When a problem contains **more than one** operation, multiplication and division must be done **before** addition and subtraction.

$5 + 3 \times 4$ $= 5 + 12$ $= 17$	$7 \times 2 + 4$ $= 14 + 4$ $= 18$	$9 \div 3 + 6$ $= 3 + 6$ $= 9$	$3 + 6 \div 3$ $= 3 + 2$ $= 5$
$9 - 4 \times 2$ $= 9 - 8$ $= 1$	$5 \times 3 - 7$ $= 15 - 7$ $= 8$	$8 \div 4 - 2$ $= 2 - 2$ $= 0$	$9 - 6 \div 2$ $= 9 - 3$ $= 6$

2 Follow the order of operations to solve the following problems:

a) $32 \div 8 + 5$ $= 4 + 5$ $= 9$	b) $5 + 20 \div 4$ $= 5 + 5$ $= 10$	c) $6 + 6 \times 2$ $= 6 + 12$ $= 18$
d) $16 \div 2 - 7$ $= 8 - 7$ $= 1$	e) $16 - 8 \div 4$ $= 16 - 2$ $= 14$	f) $8 - 2 \times 3$ $= 8 - 6$ $= 2$
g) $2 \times 8 - 6$ $= 16 - 6$ $= 10$	h) $6 + 5 - 3 - 2$ $= 8 - 2$ $= 6$	i) $6 \times 5 \div 3 \div 2$ $= 30 \div 3 \div 2$ $= 5$

Fourth: **Problems that contain parentheses:**

- When a problem contains parentheses, the operation **inside** the **parentheses** is done **first**.
- If the parentheses contain **more than one** operation, **the order of operations is followed**:

$(5 - 2) \times 4$ $= 3 \times 4$ $= 12$	$21 \div (9 - 2)$ $= 21 \div 7$ $= 3$	$7 + (4 \times 5)$ $= 7 + 20$ $= 27$
$(5 + 9) \div (8 - 6)$ $= 14 \div 2$ $= 7$	$4 \div (4 \times 6 - 20)$ $= 4 \div (24 - 20)$ $= 4 \div 4$ $= 1$	

3 Follow the order of operations to solve the following problems:

ⓐ $4 \times (5 + 3)$
= 4×8
= 32

ⓑ $(16 \div 8) - 2$
= $2 - 2$
= 0

ⓒ $(9 + 2) \times 4 \div 2$
= $11 \times 4 \div 2$
= 22

ⓓ $(7 + 3) \times (15 - 8)$ = 10×7
= 70

ⓔ $25 - (6 + 2 \times 7)$ = $25 - (6 + 14)$
= 5

Fifth ▸ Problems with more than one operation:

- **If the problem contains more than one operation,**

multiplication and division must be done **before** addition and subtraction.

Then, add and subtract from **left** to **right**.

Ex. $30 \div 5 + 4 \times 7 + 2 \times 6$

= $6 + 28 + 12$

= $34 + 12$

= 46

Ex. $3 \times 4 \times 5 + 40 \div 4 \div 2$

= $12 \times 5 + 10 \div 2$

= $60 + 5$

= 65

4 Follow the order of operations to solve the following problems:

ⓐ $2 + 4 \times 6$
= $2 + 24$
= 26

ⓑ $48 \div 4 + 9$
= $12 + 9$
= 21

ⓒ $6 \times (3 - 3) \times 5$
= $6 \times 0 \times 5$
= 0

ⓓ $7 + 70 \div 10 - 2$
= $7 + 7 - 2$
= 12

ⓔ $49 - 7 \times 6 + 4$
= $49 - 42 + 4$
= 11

ⓕ $8 \times 2 + 24 - 12$
= $16 + 24 - 12$
= 28

ⓖ $8 \times 3 + 6 \div 2$
= $24 + 3$
= 27

ⓗ $21 \div (3 - 2) \times 3$
= $21 \div 1 \times 3$
= 63

ⓘ $25 \div 5 + 30 \div 3$
= $5 + 10$
= 15

5 Adel loves chocolate. He received 246 bars of chocolate for his birthday. He ate 24 bars and wants to give the rest to 6 of his friends. How many bars of chocolate would each friend have if he divided them equally?

$246 - 24 = 222$ bars.

$222 \div 6 = 37$ bars.

6 Maha walked 14 kilometers every day for two weeks.
The following week, Maha walked 56 kilometers.
How many kilometers did she walk during those three weeks?

$14 \times 14 = 196$ km.

$196 + 56 = 252$ km.

7 Ashraf should take the bus to go to work. It takes 27 minutes to reach the bus stop near his workplace. After that, he has to walk for 12 minutes from the bus stop to his workplace. How many minutes does Ashraf spend on his way to work 5 days a week?

$27 + 12 = 39$ minutes.

$5 \times 39 = 195$ minutes.

8 A group of tourists is on a tour in Alexandria. The group includes 172 tourists and 8 tour guides who want to travel to visit the Pyramids by microbus. Each microbus can accommodate 9 people. How many microbuses do they need so that everyone can reach the Pyramids?

$172 + 8 = 180$ persons

$180 \div 9 = 20$ microbuses.

9 Nashwa wants to bake blueberry pancakes. She will put 6 berries in each pancake. Nashwa bought 198 berries from the store. On her way home, Nashwa ate 18 berries. How many pancakes can Neshwa bake with the remaining berries?

$198 - 18 = 180$ berries.

$180 \div 6 = 30$ pancakes.

10 Write a story problem that can be represented by the following equation: $6 + 36 \div 4$.

Many answers can be written

/10

1 Choose the correct answer:

a) $5 \times 6 - 4 =$ 26 (10 or [26] or 34 or 7)

b) $9 - 5 - 3 =$ 1 (11 or 17 or [1] or 7)

c) $7 \times (2 + 3) - 4 =$ 31 (7 or 13 or 15 or [31])

2 Follow the standard order of operations to solve:

a) $18 \times 2 + 8 - 3$

$36 + 8 - 3$

$= 44 - 3 = 41$

b) $73 - 60 + 15 \div 3$

$73 - 60 + 5$

$= 13 + 5 = 18$

c) $34 - (6 + 10) \div 8$

$34 - 16 \div 8$

$= 34 - 2 = 32$

3 Marwan saved 6 pounds per day for 8 days and then 5 pounds per day for 7 days. What is the total amount of money that he saved in all days?

$6 \times 8 + 5 \times 7 = 48 + 35 = 83$

Guide Answers Main Book

Unit 1

Lessons 1&2

Big Numbers!
Changing Values

1 a Twenty seven million, two hundred fifty-four thousand, nine hundred eighty-five.
b One Milliard, three hundred ninety million, four hundred two thousand, six hundred fifty.

2 a 45,125,123 b 259,024,000
c 278,000,986 d 9,109,000,500
e 3,065,026,045 f 4,005,009,080
g 10,000,050,200 h 6,005,000,040

3 a Five million, two hundred fourteen thousand, three hundred twenty
b Forty five million, one hundred fifty thousand, two hundred.
c Seven hundred fourteen million, fifty-eight thousand, nine
d Four hundred five million, six thousand, forty-seven.
e Seven milliard, five hundred four million, six hundred thirty thousand, four hundred twelve.
f Three milliard, twenty-five million, forty-thousand, seven
g Nine milliard, five hundred thousand
h Eight milliard, thirty million, twenty thousand

4 a Ten Thousands , 20,000
b Millions , 9,000,000
c Tens , 0
d Hundred Thousands , 600,000
e Milliards , 8,000,000,000

5 a Hundred Thousands , 700,000
b Tens , 70
c Milliards , 7,000,000,000
d Ones , 7 e Millions , 7,000,000
f Hundred Millions , 700,000,000

6 a 8 b 2 c 6

7 a 3 b 9 c 3

8 a 300 b 70,000,000
c 4,000 d 6,000,000,000
e 70,000

9 a 5,000 b 8
c 500 d 600,000
e 500 f 80
g 90 h 6,000

10

The number of ants in each hill	7	12	28	92	156	1,786
The number of ants in all hills	70	120	280	920	1,560	17,860

1 a Sixty million, twenty five thousand, seven hundred three
b Ten Thousands c 0

2 a 40 b 823,686
c 7

3 a → 2 b → 4
c → 1 d → 3

Lessons 3&4

Many Forms to Write Numbers
Composing and Decomposing

1. a. Seventeen million, two hundred thousand, five hundred twenty-three.
   b. One hundred million , twenty thousand, forty-five.
   c. 20,100,459: Twenty million, one hundred thousand, four hundred fifty-nine.
   d. 7,000,050,200: Seven milliard (billion), fifty thousand, two hundred.
2. a. 5,025,203 b. 3,003,003,003
   c. 9,040,080,206 d. 7,000,500,200
3. a. 40,000,000 + 300,000 + 100 + 2
   b. 7,000,000,000 + 80,000 + 6
   c. 7,000,000,000 + 50,000 + 200
   d. 100,000,000 + 50,000,000 + 20,000 + 9,000 + 300 + 10 + 6
4. a. 8,027,050,006
   (8 X 1,000,000,000) + (2 X 10,000,000) + (7 X 1,000,000) + (5 X 10,000) + (6 X 1)
   b. 6 , 000 , 920 , 590
   c. 20 , 014 , 023
   (2 X 10,000,000) + (1 X 10,000) + (4 X 1,000) + (2 X 10) + (3 X 1)
5. a. 80,070,021
   b. 2,000,098,500
   c. 900,250,209
6. a. 60,000,000 + 7,000,000 + 100,000 + 20,000 + 5,000 + 10 + 2
   b. 7,000,000 + 20,000 + 4,000 + 600 + 50
   c. 70,000,000 + 5,000,000 + 30,000 + 400 + 60
7. a. (5 X 1,000,000) + (2 X 100,000) + (6 X 1,000) + (4 X 1,000) + (1 X 100) + (5 X1)
   b. (1 X 10,000,000) + (2 X 100,000) + (5 X 100)
   c. (1 X 10,000,000) + (2 X 100,000) + (5 X 100) + (4 X 10) + (8 X 1)
   d. (2 X 1,000,000,000) + (2 X 100,000) + (5 X 10) + (7 X 1)

Quiz

1. a. 700,126,450
   b. 33 millions, 25 thousands
   c. (4 x 10,000) + (5 X 100) + (8 X 1)
2. a. 50,030,600
   b. 8,000,008,000
   c. 7 Milliards
3. a. 7,300,040,008
   b. (7 X 1,000,000,000) + (3 X 100,000,000) + (4 X 10,000) + (8 X 1)

Lessons 5–7

Comparing Big Numbers
Comparing Numbers in Multiple Forms
Descending and Ascending Numbers

1. a. > b. = c. < d. < e. >
2. a. 520,000 , 502,000 , 250,000 , 205,000
   b. 643,205 , 436,250 , 364,250 , 346,205
3. a. 100,000 , 900,900 , 999,999 , 9,000,000
   b. 78,090 , 78,091 , 78,999 , 79,010 , 79,100
4.

	Standard Form	Order
a	3,010,002,050	3
b	3,100,020,005	4
c	3,001,200,500	2
d	3,100,200,100	5
e	3,001,002,005	1

4

	Standard Form	Order
a	4,000,060,007	3
b	4,000,600,070	2
c	4,000,600,700	1
d	4,000,006,700	4
e	4,000,006,070	5

Quiz

1. a = b > c >
2. a 1,000,000,000 b 3 x 1,000
   c 10,000
3. a (1) 783,568 , 785,368 , 786,385 , 788,635
   (2) 788,635 , 786,385 , 785,368 , 783,568
   b (1) 500,005 , 500,500 , 505,000 , 550,000
   (2) 550,000 , 505,000 , 500,500 , 500,005

Lesson 8

Rounding Rules

First: The Midpoint Strategy:

1. a 240 b 100
2. a 300 b 7,400
3. a 5,000 b 11,000
4. a 9,000,000 b 23,000,000

Second: Rounding Rule:

5. a 260 b 370 c 70
   d 100 e 12,260 f 123,990
6. a 800 b 6,900 c 71,900
   d 1,000 e 30,000 f 1,500
7. a 16,000 b 90,000
   c 1,000,000 d 453,000,000
   e 669,460,000 f 6,000,000,000

Quiz

1. a 300,000 b 360,000 c 74,000
2. a 342,698 b 7,395 c 5 milliard
3. a 7,000 b 9,300

Unit 2

Lesson 1

Properties of Addition

1. a Commutative. b Identity Element.
   c Associative. d Commutative.
   e Identity Element. f Associative.
2. a 3 , Commutative. b 17 ,Commutative.
   c 5 , Identity Element.
   d 0 , Identity Element.
   e 3 ,Associative. f 25 , 20 ,Associative.
3. a 88, commutative , 36, Associative.
   = 100 + 36 = 136
   b 25 , commutative
   = (10 + 45) + (25 + 75), Associative
   = 55 + 100 = 155
   c (15 + 0), Associative.
   (15 + 25) = 40, Identity

1. a Associative b Commutative
   c Additive identity
2. a 24 b 0 c 4
3. a 78 + 22 + 45 "Commutative Property"
   = (78 + 22) + 45 "Associative Property"
   = 100 + 45 = 145
   b 5 + 8 + 7 + 3 "Commutative Property"
   = (5 + 8) + (7 + 3) "Associative Property"
   = 13 + 10 = 23

Lesson 2

Addition with Regrouping

1. a) 89,900 b) 9,030,290
   c) 10,000,000 d) 11,110
   e) 1,000,005 f) 1,010,511,000
2. a) 14,102 , 14,100 (✓) , 14,100 (✓) , 14,000 (✗).
   b) 9,872 , 9,870 (✓) , 9,900 (✗) , 10,000 (✗).
3. Estimation: 140 + 170 = 310.
   Actual Answer: 142 + 165 = 307. (Reasonable)
4. Estimation: 400 + 500 = 900.
   Actual Answer: 383 + 462 = 845.
5. Estimation: 2,000 + 2,000 = 4,000.
   Actual Answer: 2,420 + 2,420 = 4,840.

1. a) 80,600 b) 101,000 c) 840
2. a) 7,000 b) =
   c) 14,000 + 71
3. 13,450 + 1,690 = 15,140 pounds
4. 46,000 + 20,400 = 66,400

Lesson 3

Subtraction with Regrouping

1. a) 19,183 b) 936,250
   c) 4,153,045 d) 31,242
   e) 5 f) 530,836,451
2. a) 13,299 – 13,290 (✓) – 13,300 (✗) – 13,000 (✗)
   b) 9,053 – 9,050 (✓) – 9,000 (✗) – 9,000 (✗)
3. 15,422,140 – 6,350,300 = 9,071,840 ants
   15,000,000 – 6,000,000 = 9,000,000 ants
4. 255,000 – 6,200 = 248,800 ants
5. 3,548 – 1,672 = 1,876 cm
6. 3,452 – 1,267 = 2,185 ants

1. a) 82098 b) 75145 c) 9,000,001
2. a) 71900 b) <
   c) 39,000 + 1
3. 15,620 – 7,550 = 8,070 pounds
4. 18,880 – 9,500 = 9,380

Lessons 4&5

Bar Models, Variables, and Story Problems – Solving Multistep Story Problems with Addition and Subtraction

1. a) Solution: x = 7,120 – 5,200
   x = 1,920

7,120	
x	5,200

   b) Solution: y = 22,120 + 18,850
   y = 40,970

y	
22,120	18,850

   c) Solution: z = 6,000 – 812
   z = 5,188

6,000	
812	z

   d) Solution: w = 7,600 – 4,455
   w = 3,145

7,600	
w	4,455

2. a) Equation: x = 8,500 – 6,250
   Solution: x = 2,250

8,500	
x	6,250

   b) Equation: x = 2,050 – 985
   Solution: x = 1,065

2,050	
x	985

   c) Equation: y = 4,200 – 3,350
   Solution: y = 850

4,200	
y	3,350

   d) Equation: a = 90,950 + 750,500
   Solution: a = 841,450

a	
90,950	750,500

3. 1,075 + 1,120 + 1,325 = 3,520
   6,853 – 3,520 = 3,333

4. 59,000 + 27,525 + 32,975 = 119,500
   150,000 – 119,500 = 30,500
5. 320,000 + 200,000 = 520,000
   520,000 – 420,195 = 99,805

1. a) n = 8,000 b) c = 420
   c) m = 74
2. a) 65 b)

15	
x	7

   c) 20 + m = 40
3. 900 – x = 650 , x = 900 – 650 = 250 pounds

Unit 3

Lesson 1

Measuring Length

1. a) Centimeter b) Kilometer
   c) Millimeter d) Kilometer
   e) Meter
2.

a	b	c
5,000	2	9
6	900	50
20,000	30	70
35	40,000	600

3. a) 840 cm b) 5,020 cm
   c) 7,070 m d) 15,120 m
   e) 3 m , 72 cm f) 10 m , 5 cm
   g) 9 km , 300 m h) 70 km , 20 m
4. a) 5,400 cm b) 23,000 cm
   c) 23,000 m d) 600,000 m
   e) 7,000 m f) 860 m
   g) 9,000 km h) 430 km
5. a) 625 cm b) 9,032 cm
   c) 4,138 m d) 14,225 m
   e) 4 m , 25 cm f) 20 m , 3 cm
   g) 7 km , 529 m h) 900 m , 50 cm
6. 100,000 cm = 1,000 m = 1 km.
7. 15 dm = 1,500 mm
8. 500 ÷ 50 = 10 minutes.
   50 × 30 = 1,500 m
9. 7,000 – 5,000 = 2,000 m

1. a) 42,000 b) 200
   c) 50 km + 20 m d) 2,109
2. a) Meter b) Kilometer
   c) Centimeter d) Millimeter
3. 3 km = 3,000 m = 30,000 dm = 300,000 cm

Lesson 2

Measuring Mass

1. a) Kilogram b) Gram
   c) Gram d) Kilogram
2.

a)

Gram	Kilogram
2,000	2
15,000	15
61,000	61

b)

Gram	Kilogram
9,000	9
5,000	5
12,000	12

3. a) 9,105 grams. b) 32,008 grams.
   c) 8 kg , 235 g d) 41 kg, 623 g
4. a) 6,000 g b) 200,000 g
   c) 90 kg d) 200 kg
   e) 3 kg 624 g f) 67 kg 26 g
   g) 5,583 g h) 50,009 g
5. 45,200 gram.
6. 5 kg = 5,000 g , 7 kg = 7,000 g.
   The sum = 5,000 + 500 + 7,000 = 12,500 g.

Quiz

1. a) 42,000 b) 50
 c) 10 kg + 70 g
2. a) kilogram b) 30,005
 c) >
3. 8,700 – 5,300 = 3,400 g

Lesson 3

Units of Capacity

1. a)
 50,000
 200
 520,000,000
 b)
 8,000
 7
 18,000
2. a) 35,020 mm b) 9,252 milliliter
 c) 3 liter 22 milliliter
 d) 200 liter 200 milliliter
3. a) 10,547 b) 9,700
 c) 17,255 d) 20,050
4. a) 3,000 milliliter b) 50,000 milliliter
 c) 700 liter d) 15 liter
 e) 7 liter 320 milliliter
 f) 30 liter 25 milliliter
 g) 11,011 milliliter
 h) 10,002 milliliter
5. 45 liter = 45,000 milliliter
 30 liter , 250 milliliter = 30,250 milliliter
 Amount of gasoline = 45,000 – 30,250
 = 14,750 milliliter
6. 2,500 milliliter ، 1,250 milliliter
 Amount of juice = 2,500 + 1,250
 = 3,750 milliliter
7. 2 liter = 2,000 milliliter
 The amount of soda water = 2,000 – (230 + 250)
 = 2,000 – 480
 = 1,520 milliliter

Quiz

1. a) 20,020 b) 50,010
 c) 43,260 mL
2. a) 50,005 b) 10
 c) >
3. 2,000 ÷ 200 = 10 bottles
4. 6,000 – 4,200 = 1,800 mL.

Lessons 4&5

Units of Time – Elapsed Time

1. Answer by yourself.
2. a) 7 , 21 , 35 , 49 , 63
 b) 24 , 96 , 144 , 192 , 240
 c) 60 , 120 , 300 , 480 , 600
 d) 60 , 180 , 360 , 420 , 540
3. a) 16 b) 178
 c) 87 d) 130
 e) 335 f) 650
 g) 305
4. a) 6,3 b) 2,2
 c) 5,10 d) 2,30
 e) 5,30 f) 1,30
 g) 10,5
5. 3 + 4 = 7 days.
 7 days = 168 hours.
6. 3 + 2 + 4 = 9 hours.
 9 hours = 540 minutes.
7. a) 9:00 b) 8:10
 c) 6:42 d) 4:33
 e) 9:50 f) 6:27
8. 8:45 + 1:25 = 9:70
 = 10:10
9. 3:30 + 2:45 = 5:75
 = 6:15

10. 1:22 + 2:12 + 1:57 = 4:91
 = 5:31
 (No, they don't have time)

Quiz

1. a) 9 b) 51
 c) 305 d) 2 weeks and 4 days
 e) 1 day and 6 hours
 f) 2 hours and 30 minutes
2. a) 9:00 b) 1:30
3. 8:30 – 6:20 = 2:10

Lessons 6&7

Applications of Measurements 1,2

1. Weight of potatoes and onions:
 - 2,950 – 1,075 = 1,875 g
 - 2,950 + 1,875 = 4,825 g
2. 12 weeks = 84 days.
 The difference = 84 – 45 = 39 days.
3. 20,000 mL = 20 L
 100 – 20 = 80 L
4. 8,000 + 10,000 + 500 + 225 + 275
 = 19,000 g = 19 kg

 7 cm
 5 cm

5. 12 ÷ 3 = 4 m = 400 cm
6. 4 X 500 = 2,000 mL
 = 2 L
 2 X 7 = 14 L
7. 5 X 500 = 2,500 g
 100,000 + 2,500 = 102,500 g

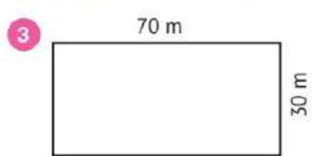
 8 cm
 3 cm

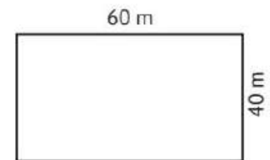
Unit 4

Lesson 1

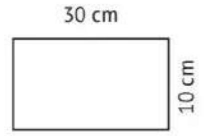
Finding Perimeter

1. a) 26 cm b) 78 cm c) 100 cm
2. a) 140 cm b) 32 m c) 6 m
3.





4. P = 20 X 4
 = 80 cm



5. a) S X 4 b) (L + W) X 2
 c) 7 X 4 = 28 m d) (8 + 6) X 2 = 28 cm
 e) (50 + 30) X 2= 160 m

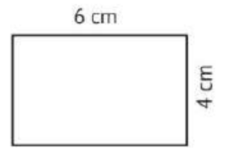
Quiz

1. a) 44 b) 32
 c) L X 2 + W X 2
2. a) 4 cm, 2 cm b) P= L + W + L + W
 c) 24
4. P = 6 X 4 = 24 cm

Lesson 2

Finding Area

1. a) 40 cm^2 b) 250 cm^2 c) 400 cm^2
2. 8 X 6 = 48 m^2
3. 9 X 9 = 81 cm^2
4. Area = 12 X 2 = 24 m^2
 P = (12 + 2) X 2 = 28 m
5. P = (8 + 3) X 2
 = 22 cm

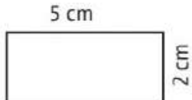


P = (6 + 4) X 2

= 20 cm

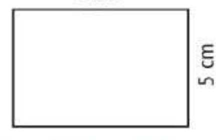
❻ P = (5 + 2) X 2

= 14 cm



A = 5 X 2

= 10 cm^2



❼ P = (6 + 5) X 2

= 22 cm

❽ ⓐ A = S X S ⓑ A = L X W ⓒ 160 ⓓ 64 ⓔ 36

Quiz

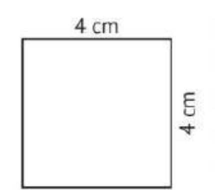
❶ ⓐ 28 ⓑ 36

ⓒ L X W

❷ ⓐ 4 cm , 3 cm ⓑ A = S X S

ⓒ 64

❸ A = 8 X 2 = 16 sq. cm



Lesson 3

Unknown Dimensions

❶ ⓐ 34 cm , 70 cm^2 ⓑ 9 m , 54 m^2

ⓒ 8 mm , 96 mm^2 ⓓ 9 cm , 26 cm

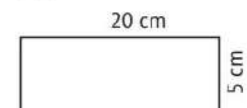
ⓔ 6 dm , 28 dm

❷ ⓐ 24 cm , 36 cm^2 ⓑ 7 m , 49 m^2

ⓒ 8 mm , 32 mm

❸ P = 40 cm A = 70 cm^2

❹ 25 cm × 4 cm



❺ $\frac{1}{2}$ P = 60 m

L = 60 − 30

= 30 m

30 m × 30 m

Quiz

❶ ⓐ 28 ÷ 4 = 7 cm ⓑ 50 ÷ 10 = 5 cm

ⓒ 5 cm

❷ ⓐ (26 ÷ 2) − 5 = 8 cm

ⓑ (44 ÷ 2) − 15 = 7 cm

ⓒ 20 ÷ 4 = 5 cm

❸ w = (60 ÷ 2) − 20 = 10 cm,

A = 20 X 10 = 200 Sq. cm

Lesson 4

Complex Shapes

❶ P = 25 + 18 + 8 + 10 + 17 + 8 = 86 cm

A = (25 X 8) + (10 X 8) = 200 + 80

= 280 sq. cm

❷ P = 30 + 8 + 15 + 12 + 7 + 12 + 8 + 8

= 100 cm

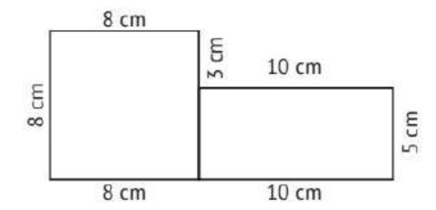
A = (30 X 8) + (12 X 7) = 240 + 84

= 324 sq. cm

❸ A = (8 X 8) + (10 X 5) = 64 + 50

= 114 sq. cm

P = 8 + 8 + 8 + 10 + 5 + 10 +3 = 52 cm



Quiz

❶ P = 9 + 7 + 2 + 4 + 7 + 3 = 32 cm

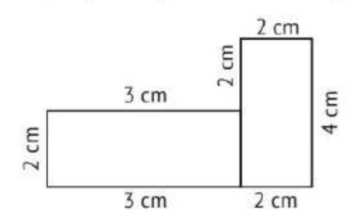
A = (9 X 3) + (4 X 2) = 27 + 8 = 35 sq. cm

❷ P = 5 + 8 + 4 + 5 + 1 + 3 = 26 cm

$A = (5 \times 4) + (5 \times 3) = 20 + 15 = 35$ sq. cm

3 $P = 4 + 2 + 3 + 2 + 3 + 2 + 2 = 18$ cm

$A = (4 \times 2) + (3 \times 2) = 8 + 6 = 14$ sq. cm



Unit 5

Lessons 1-3

Multiplicative Comparison
Creating Multiplicative Comparison Equations
Solving Multiplicative Comparison Equations

1 a $4 \times 7 = X$ b $4 \times 3 = y$
c $k = 2 \times 7$ d $z = 6 \times 3$
e $24 = 3 \times y$ f $48 = 8 \times n$
g $21 = 3 \times a$ h $36 = m \times 9$

2 a $X = 5 \times 4 = 20$
b $12 = 3 \times a$ / number of pieces = 4
c $21 = y \times 7$ / number of times = 3
d $X = 2 \times 4$ / number of times = 8
e $18 = 6 \times m$ / number of times = 3

3 a $X = 8 \times 4$, $X = 32$
b $y = 6 \times 5$, $y = 30$
c $m = 9 \times 2$, $m = 18$
d $18 = 6 \times a$, $a = 18 \div 6 = 3$
e $36 = 4 \times b$, $b = 36 \div 4 = 9$
f $42 = 7 \times n$, $n = 42 \div 7 = 6$

4 a $15 = 3 \times a$, $a = 15 \div 3 = 5$
b $b = 5 \times 3$, $b = 15$
c $20 = 5 \times a$, $a = 20 \div 5 = 4$
d $24 = 3 \times y$, $y = 24 \div 3 = 8$

Quiz

1 a 9 b $6 \times 3 = 18$ c 28
2 a 9 b 9 c $a \times 3 = 15$
3 $a = 3 \times 7 = 21$ pounds

Lessons 4&5

Commutative Property of Multiplication
Identity Property and the Zero Property

1 a 7 b 6 c 6 d 9
2 a 8 b 10 c 6 d 8
3 $5 \times 6 = 6 \times 5$
4 $5 \times 8 = 8 \times 5$
5 a 0 b 0 c 1
d 9 e 7 f 1
6 a 80 b 900 c 6,000
d 120 e 2,000 f 30,000
7 a 10 b 1,000 c 100
d 100 e 10 f 10

Quiz

1 a 7 b 2,000
c 0 d 100
2 a 5 b 1,000
c 1 d 0
3 $90 \times 10 = 900$ pounds

Lessons 6&7

Associative Property of Multiplication
Applying Patterns in Multiplication

1. a) (5 X 3) X 2 = 15 X 2 = 30
   b) (3 X 4) X 2 = 12 X 2 = 24
   c) 2 X (5 X 4) = 2 X 20 = 40
   d) 10 X (6 X 5) = 10 X 30 = 300
2. a) 3,5 b) 3,4 c) 7,9 d) 7,2
3. 6 X 2 X 3 = 6 X (2 X 3) = 6 X 6 = 36 eggs.
4. 4 X 2 X 5 = 4 X (2 X 5) = 4 X 10 = 40 bottles.
5. a) 10 b) 100 c) 8 d) 5 e) 60
6. a) 240 b) 240 c) 4,000
   d) 6,300 e) 40,000 f) 42,000

Quiz

1. a) 2 , 6 b) 10
   c) 12,000 d) 500 , 9
2. a) 7 b) 100
   c) > d) <
3. (2 X 5 X 3)
   10 X 3 = 30 flowers.

Unit 6

Lessons 1&2

Identifying Factors of Whole Numbers
Prime and Composite Numbers

1. a) 1, 2, 3, 4, 6, 12 b) 1, 2, 4, 5, 8, 10, 20, 40
   c) 1, 2, 3, 4, 6, 9, 12, 18, 36
2. a) 1, 5, 25 b) 1, 2, 3, 4, 6, 8, 12, 16, 24, 48
   c) 1,19
3. 10, 20, 30
4. a) 5 b) 2 , 5 , 10 c) 2
   d) 5 e) 2
5. a) 3,5 b) 2,3,6,9
   c) 2,5 d) 2,3,6,9
   e) 2,5 f) 3,9
6. a) 1, 2, 7, 14 (Composite number)
   b) 1, 2, 23, 46 (Composite number)
   c) 1, 2, 11, 22 (Composite number)
   d) 1, 59 (Prime number)
   e) 1, 2, 5, 10, 25, 50 (Composite number)
   f) 1,29 (Prime number)
7. a) 28 b) 48
   c) 35

Quiz

1. a) prime number b) 23 , 29
   c) odd , 2
2. a) 2 b) 5
   c) 20
3. a) 1,2,3,6,9,18 b) 1,2,4,5,10,20

Lesson 3

Greatest Common Factor (GCF)

1. a) 4 b) 10
   c) 7 d) 1
2. Largest number of groups = (GCF) = 9
   Number of boys in each group
   = 27 ÷ 9 = 3 boys.
   Number of girls in each group
   = 36 ÷ 9 = 4 girls.
3. Number of snacks
   (GCF) = 12
   Number of apples in each
   package = 24 ÷ 12 = 2 apples.
   Number of candy in each
   package = 36 ÷ 12 = 3 candies.

1. a) 2 b) 6
   c) 1
2. a) 1,2,7,14 b) 1,5,7,35
   c) 1 , 7 d) 7
3. a) 5 b) 10÷5= 2 pencils
   c) 15 ÷ 5 = 3 erasers

Lessons 4–6

Identifying Multiples of Whole Numbers
Common Multiples
Relationships Between Factors and Multiples

1. 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40.
2. 0, 5, 10, 15, 20, 25, 30, 35, 40.
3. a) 4, 8, 12, 16, 20, 24, 28, 32, 36, 40, 44, 48, 52, 56, 60, 64, 68, 72, 76, 80, 84, 88, 92, 96, 100
   b) 10, 20, 30, 40, 50, 60, 70, 80, 90, 100
4. a) 0, 16, 32, 40, 56, 64, 72, 80
   b) 0, 6, 12, 18, 24, 30, 36, 42, 48, 54, 60
   c) 0, 7, 14, 21, 28 d) 27, 54, 99, 36, 45
5. 0, 6, 12, 18
6. 0, 12, 24
7. a) 8, 16 b) 10, 20
   c) 24, 48 d) 42, 84
8. a) 40, 50, 60, 70 b) 48, 60, 72, 84
   c) 72, 96, 120
9. a) 35 , 5,7 , 5,7 , 35 b) 48 = 6 X 8 , 8 , 8 , 48
   c) 24 d) 27
   e) 2 and 3 are factors of 6 or 6 is a multiple of 2,3

1. a) 6 , 12 , 18 , 24 , 30
   b) 24 , 48 c) 2 and 4 are factors of 8
2. a) 16 b) 24
   c) multiple
3. a) 0 , 4 , 8 , 12 , 16 , 20 , 24 , 28
   b) 0 , 6 , 12 , 18 , 24 , 30
   c) 0 , 12 , 24

Unit 7

Lesson 1

The Area Model Strategy

1. a) 64   b) 84
2. a) 120   b) 522   c) 268   d) 686
3. 702
4. 192

Quiz

1. a) 175   b) 332
2. a) 4 X 27 = 108   b) 9 X 53 = 477
3. 4 X 67 = 268

Lesson 2

The Distributive Property

1. a) 128   b) 2,244   c) 47,106   d) 10,748
2. a) 3,000   b) 1,944   c) 19,425   d) 39,696
3. 980 cm.

Quiz

1. a) 80 , 9   b) 6 X (500 + 30 + 7)
   c) 30 + 4
2. a) (3 X 60) + (3 X 7) = 180 + 21 = 201
   b) (8 X 400) + (8 X 3) = 3,200 + 24 = 3,224
   c) (4 X 200) + (4 X 40) + (4 X 7)
   = 800 + 160 + 28
   988
3. 8 X 890 = 8 X (800 + 90) = 8 X 800 + 8 X 90
   = 64,000 + 720 = 7,120 piasters
4. (6 X 800) + (6 X 40) + (6 X 3)
   = 4,800 + 240 + 18 = 5,058

Lessons 3&4

The Partial Products Algorithm
Multiplying by a 1-Digit Number

1. a) 2,048   b) 23,916   c) 567   d) 5,616   e) 500   f) 76,185
2. a) 1,200 , 1,422 , 1,422
   b) 63,000 , 66,825 , 66,825
3. a) 336   b) 1,944   c) 29,232   d) 216   e) 1,192   f) 39,330

Quiz

1. a) 6,308   b) =   c) 38 X 4
2. a) 116   b) 1,035
3. a) 3,675   b) 3,150
4. 24 X 9 = 216 hours

Lesson 5

Multiplying a 2-Digit Number by a Multiple of 10

1. a) 960   b) 2,960
2. a) 2,800   b) 5,740
3. a) 7,650   b) 810
4. a) 450   b) 700   c) 840   d) 2,400

Quiz

1. a) 960   b) 3,000   c) >
2. a) 1,080   b) 920
3. a) (80 X 20) + (80 X 5) = 1,600 + 400 = 2,000

ⓑ (20 X 60) + (20 X 8) = 1,200 + 160 = 1,360

4 30 X 24 = 720 days

Lessons 6&7

Exploring Remainders
Patterns in Division

1 ⓐ 25 , 4 , 6 , 1 ⓑ 30 , 6 , 5 , 0

ⓒ 28 , 5 , 5 , 3 ⓓ 16 , 3 , 5 , 1

ⓔ 15 , 2 , 7 , 1

2 60 ÷ 40 = 1 R 20

Number of buses = 2.

Number of empty seats

= 40 − 20 = 20.

3 48 ÷ 5 = 9 R 3

Number of boxes = 10 boxes.

4 ⓐ 9 ÷ 3 = 3 , 3,000 ⓑ 15 ÷ 5 = 3 , 3,000

ⓒ 28 ÷ 4 = 7 , 7000 ⓓ 30 ÷ 5 = 6 , 600

5 ⓐ 300 ⓑ 500

ⓒ 2,000 ⓓ 500

6 9 × 90 = 810.

All workers can't ride the same metro.

7 360 ÷ 6 = 60 patties.

8 540 ÷ 9 = 60 boxes.

1 ⓐ 8 ⓑ 3,000 ⓒ <

2 ⓐ 80 ⓑ 4,200 ⓒ 3

3 2,100 ÷ 7 = 300 weeks

4 18 ÷ 6 = 3 pens

Lesson 8

The Area Model and Division

1 ⓐ 14 ⓑ 22 R2.

ⓒ 152 R1. ⓑ 400

2 868 ÷ 8 = 108 R4.

3 492 ÷ 4 = 123 cars.

Quiz

1 ⓐ 315 ÷ 3 ⓑ third model

ⓒ 26 R 2

2 ⓐ 22 R 1 ⓑ 129 R 1

3 2,135 ÷ 7 = 305 pounds

4 824 ÷ 8 = 103 meters

Lesson 9

The Partial Quotients Algorithm

1 ⓐ 16 R3 ⓑ 28

ⓒ 125 ⓓ 234 R1

ⓔ 2,312 ⓕ 2,092 R2

2 480 ÷ 3 = 160 cups.

3 1,026 × 5 = 5,130 cans.

5,130 ÷ 2 = 2,565 cans.

1 ⓐ 78 ÷ 6 ⓑ third model

ⓒ 17 R 3

2 ⓐ 345 ÷ 5 = 69 students

ⓑ 72 ÷ 6 = 12 pounds

Lessons 10&11

The Standard Division Algorithm
Division and Multiplication

1 ⓐ 60 , 90 − 20 , 30

ⓑ 600 , 900 − 200 , 300

ⓒ 200 , 240 − 50 , 60

ⓓ 4,000 , 6,000 − 2,000 , 3,000

e 4,000 , 8,000 – 1,000 , 2,000

2 a 13 b 24 R1

c 152 d 139 R3

e 2,819 f 3,269

3 784 ÷ 8 = 98 passengers.

4 a 3 – 100 – 200 – 169

b 2 – 60 – 70 – 66

c 3 – 600 – 700 – 608

d 3 – 600 – 700 – 603

5 a 192 – 3 – 100 – 200

b 93 – 2 – 90 – 100

6 219 ÷ 3 = 73 km.

Quiz

1 a 432 ÷ 4 = 108 b 20 and 30

c 2,004

2 a 236 R 1 b 75 R 7

3 a 315 ÷ 7 = 45 students

b 216 ÷ 9 = 24 plants

Unit 8

Lessons 1–4

The Order of Operations and Story Problems

1 a 22 b 5 c 15

d 15 e 1 f 90

g 6 h 12 i 23

2 a 9 b 10 c 18

d 1 e 14 f 2

g 10 h 6 i 5

3 a 32 b 0 c 22

d 70 e 5

4 a 26 b 21 c 0

d 12 e 11 f 28

g 27 h 63 i 15

5 246 – 24 = 222 bars.

222 ÷ 6 = 37 bars.

6 14 × 14 = 196 km.

196 + 56 = 252 km.

8 27 + 12 = 39 minutes.

5 × 39 = 195 minutes.

7 172 + 8 = 180 persons

180 ÷ 9 = 20 microbuses.

8 198 – 18 = 180 berries.

180 ÷ 6 = 30 pancakes.

9 & 10 Answer by yourself.

1 a 26 b 1

c 31

2 a 36 + 8 – 3 = 44 – 3 = 41

b 73 – 60 + 5 = 13 + 5 = 18

c 34 – 16 ÷ 8 = 34 – 2 = 32

3 6 X 8 + 5 X 7 = 48 + 35 = 83

PONY
سلسلة كتب الاستاذ
MATH
2025
EXERCISES, FINAL REVISION & EXAMS
4
PRIMARY
FIRST TERM

Number Sense and Operations

Mathematical Operations and Algebraic Thinking

Number Sense and Operations

Theme Units:

Unit 1 Place Value

Concept 1.1: Reinforcing Place Value

Concept 1.2: Using Place Value

Unit 2 Addition and Subtraction Strategies

Concept 2.1: Using Addition and Subtraction Strategies

Concept 2.2: Solving Multistep Problems

Unit 3 Concepts of Measurement

Concept 3.1: Metric Measurement

Concept 3.2: Measuring Time

Unit 4 Area and Perimeter

Concept 4.1: Explore Area and Perimeter

Unit 1 Place Value

Concept 1.1 Reinforcing Place Value

Lessons 1&2 Big Numbers! Changing Place Values

1 Use the following place value table to read the shown number:

ⓐ

Milliards	Millions			Thousands			Ones		
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones
			8	1	0	4	2	8	8

– The previous number is read as:

Eight million, one hundred four thousand, two hundred eighty-eight.

ⓑ

Milliards	Millions			Thousands			Ones		
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones
		4	3	1	8	0	0	0	5

– The previous number is read as:

Forty-three million, one hundred eighty thousand, five.

ⓒ

Milliards	Millions			Thousands			Ones		
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones
	5	1	8	1	2	9	2	0	8

– The previous number is read as:

Five hundred eighteen million, one hundred twenty-nine thousand, two hundred eight.

d

Milliards	Millions			Thousands			Ones		
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones
5	0	0	2	4	0	3	7	5	0

– The previous number is read as: Five milliard, two million, four hundred three thousand, seven hundred fifty.

e

Milliards	Millions			Thousands			Ones		
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones
7	3	6	5	4	2	9	9	6	8

– The previous number is read as: Seven milliard, three hundred sixty five million, four hundred twenty-nine thousand, nine hundred sixty-eight.

2 **Write the following numbers in standard form:**

a. Three hundred forty-five million, nine hundred sixty-five thousand, seven hundred twenty-eight (345,965,728)

b. Five milliard, two hundred sixteen million, one hundred ninety thousand, seven hundred thirty-one (5,216,190,731)

c. Two hundred fifty million, three hundred sixty thousand, nine hundred eighty (250,360,980)

d. Six hundred two million, four hundred nine thousand, three hundred eight (602,409,308)

e. Sixty-two million, forty-nine thousand, thirty-eight (62,049,038)

f. Nine milliard, nine million, two thousand, two (9,009,002,002)

g. Seven milliard, four hundred twenty-six thousand, two hundred fifty-one (7,000,426,251)

h) Eight milliard, five hundred sixteen million, two hundred fifty-nine (8,516,000,259)

i) One million, five thousand, six (1,005,006)

j) Thirty million, forty thousand, eighty (30,040,080)

k) Five hundred million, two hundred thousand (500,200,000)

l) Seventeen million, sixteen (17,000,016)

m) Nine milliard, two thousand (9,000,002,000)

n) Ten million, ten (10,000,010)

o) Four milliard, four hundred million (4,400,000,000)

3 Write the following numbers in word form:

a) 6,248,124: Six million, two hundred forty-eight thousand, one hundred twenty-four .

b) 21,650,230: Twenty-one million , six hundred fifty thousand , two hundred thirty .

c) 40,200,047: Forty million, two hundred thousand, forty-seven .

d) 615,340,201: Six hundred fifteen million , three hundred forty thousand , two hundred one .

e) 19,190,109: Nineteen million , one hundred ninety thousand , one hundred nine .

f) 6,025,140,800: Six milliard, twenty-five million , one hundred forty thousand , eight hundred . .

g 3,120,005,012: Three milliard , one hundred twenty million, five thousand , twelve

h 9,002,004,003: Nine milliard , two million , four thousand, three

i 52,000,000: Fifty-two million

j 120,000,000: One hundred twenty million.

k 20,000,007: Twenty million, seven

l 500,002,070: Five hundred million , two thousand , seventy

m 3,000,250,000: Three milliard , two hundred fifty thousand

n 3,800,050,009: Three milliard , Eight hundred million , fifty thousand, nine

o 9,000,000,000: Nine milliard

p 1,000,250,060: One milliard , two hundred fifty thousand, sixty

4 Write the place value and the value of the underlined digit of the following numbers:

	Number	Place Value	Value
a	7,654,328,63<u>8</u>	Ones	8
b	9,654,104,<u>1</u>03	Hundreds	100
c	6,123,6<u>8</u>9,456	Ten Thousands	80,000
d	5,00<u>0</u>,412,698	Millions	0
e	<u>7</u>,021,842,036	Milliards	7,000,000,000
f	7,002,852,3<u>6</u>9	Tens	60
g	9,852,14<u>7</u>,633	Thousands	7,000
h	700,<u>5</u>20,069	Hundred Thousands	500,000
i	<u>4</u>05,039,506	Hundred Millions	400,000,000

5 Complete the following table:

	Number	The place in which digit 4 is located
a	227,102,245	Tens
b	13,247,258	Ten Thousands
c	4,127,578	Millions
d	225,124	Ones
e	2,415,220	Hundred Thousands
f	6,125,200,482	Hundreds
g	248,367,250	Ten Millions
h	4,000,000,525	Milliards
i	5,400,300,200	Hundred Millions

6 Circle the number in the place shown in front of it:

	Number	The place in which digit is located
a	528,745,43(2)	Ones
b	789,654,(0)26	Hundreds
c	427,16(7),523	Thousands
d	21(0),347,163	Millions
e	793,4(0)0,063	Ten Thousands
f	(7),463,814,325	Milliards
g	9,(5)21,005,136	Hundred Millions
h	8,8(5)2,963,852	Ten Millions
i	520,(7)53,159	Hundred Thousands
j	8,201,0(9)3	Tens

7 Complete the following:

a The value of the digit 6 in 126,251 is 6,000 .

b The value of the digit 3 in 32,105 is 30,000 .

c The place value of the digit 0 in 120,213 is Thousands .

d The place value of the digit 4 in 10,214 is Ones .

e The number 77,002,205 is read as: Seventy-seven million, two thousands, two hundred five. .

f The number "Three hundred five million, fourteen thousand, seven" is written as: 305,014,007 . **(In standard form)**

g The digit 3 in 36,154,258 is in the Ten Millions. place.

h The digit 8 in 45,185,252 is in the Ten Thousands place.

i The digit 7 in 7,335,102,562 is in the Milliards place.

j The digit 9 in 922,157,528 is in the Hundred Millions place.

8 Choose the correct answer:

a) The value of the digit 7 in 125,357 is ....7........ .

(7 or 70 or 700 or 7,000)

b) The value of the digit 0 in 87,051 is ....0........ .

(0 or 10 or 100 or 1,000)

c) The place value of the digit 8 in 15,382 is ....Tens........ .

(Ones or Tens or Hundreds or Millions)

d) The place value of the digit 7 in 725,145 is ..Hundred Thousands

(Hundreds or Thousands or Ten Thousands or Hundred Thousands)

e) Four milliard, six hundred five million, ninety thousand, fifteen = ...

(4,065,090,015 or 4,650,900,015 or 4,605,090,015 or 9,506,415)

f) Six milliard, five hundred thousand, thirty = ...

(600,030,015 or 6,000,500,030 or 6,500,000,030 or 6,500,000,300)

g) The digit 8 in 214,284,697 is in the Ten Thousands place.

(Ones or Tens or Ten Thousands or Ten Millions)

h) The digit ....2........ in 745,215,369 is in the Hundred Thousands place.

(3 or 2 or 7 or 9)

9 Complete the following:

a) 30 Tens = ...300....

b) 50 Ten Thousands = ..500,000..

c) 20 Ten Millions = 200,000,000

d) 600 Ones = ...600....

e) 700 Hundreds = ..70,000..

f) 200 Hundred Thousands = 20,000,000

g) 90 Millions = 90,000,000

h) 100 Thousands = ..100,000..

i) 5,000 = ...50.... Hundreds

j) 10,000 = ...10.... Thousands

k) 800,000 = ...80.... Ten Thousands

l) 90,000 = ..9,000.. Tens

m) 1,000,000,000 = ..1,000.. Millions

10 Complete the following:

ⓐ 500 Tens = ...5.......... Thousands

ⓑ 600 Thousands = ...60,000.......... Tens

ⓒ 60 Ten Millions = ...6,000,000.......... Hundreds

ⓓ 1,000 Hundreds = ...100.......... Thousands.

ⓔ 3,000 Hundred Thousands = ...300.......... Millions

ⓕ 9,000 Millions = ...9.......... Milliards

ⓖ 100 Thousands = ...10.......... Ten Thousands

11 Choose the correct answer:

ⓐ The value of the digit 8 in 36,815,250 is 800,000

(8,000 or 80,000 or 800,000 or 8,000,000)

ⓑ The place value of the digit 7 in 33,128,275 is ....Tens.......... .

(Ones or Tens or Ten Thousands or Hundred Thousands)

ⓒ The value of the digit 6 in the Ten Thousands place is 60,000

(60 or 6,000 or 60,000 or 600,000)

ⓓ The value of the digit 3 in the Hundred Millions place is 300,000,000

(300 or 3,000 or 300,000 or 300,000,000)

ⓔ 60 Hundred Thousands = 6,000,000

(60,000 or 600,000 or 6,000,000 or 6,000)

ⓕ 800 Thousands = ...8,000...... Hundreds (8,000 or 800 or 80 or 8)

ⓖ 4 Milliards = 400,000 Ten Thousands (400 or 4,000 or 40,000 or 400,000)

ⓗ 4,000 = ...40.......... Hundreds (4 or 40 or 400 or 4,000)

ⓘ 60,000 = ...60.......... Thousands (6 or 60 or 600 or 6,000)

ⓙ 200 Millions = 200,000,000 (20 or 200 or 200,000 or 200,000,000)

ⓚ 500 Tens = ...5,000...... (500 or 5,000 or 50,000 or 500,000)

l 1 Milliard = **1,000** Millions (100 or 10,000 or [1,000] or 1,000,000)

m The value of the digit 3 in 9,237,468,258 is **30,000,000**

(3,000,000,000 or 300,000,000 or [30,000,000] or 3,000,000)

n The **smallest** number formed from the digits (5, 6, 7, 2, 0, 8) is

205,678 (876,250 or [205,678] or 678,205 or 567,208)

o 200,000 = **1,000** times of 200 (100 or [1,000] or 10,000 or 100,000)

12 **An ant colony consists of 10 hills and each hill contains the same number of ants, complete the following table:**

The number of ants in each hill	3	75	16	94	128	5,623
The number of ants in all hills	**30**	**750**	**160**	**940**	**1,280**	**56,230**

13 **Complete the following:**

a 8,000 = 10 times of **800**

b 12,000 = 10 times of **1,200**

c 1 Million = 10 times of **100,000**

d 600,000 = 10 times of **60,000**

e **800** Thousands = 10 times of 80,000

f **30,000** = 10 times of 3 Thousands

Assessment 1 on Lessons 1&2

Unit 1

1 Choose the correct answer:

ⓐ The place value of the digit 0 in 30,745 is ....Thousands.... .

(Hundreds or Thousands or Ten Thousands or Zero)

ⓑ 60,000 = ...100........ times of 600.

(10 or 100 or 1,000 or 10,000)

ⓒ ......Million...... is the **smallest** 7-digit number.

(Milliard or Million or Hundred million or Ten million)

ⓓ The place value of the digit 7 in 251,475,253

is Ten Thousands.. (Thousands or Tens or Ten Thousands or Ten Millions)

2 Complete the following:

ⓐ 400 Hundreds + 500 Tens = ...45,000......

ⓑ The value of the digit 3 in 234,542,124 is ....30,000,000....

ⓒ 400 Thousands = ...400,000......

ⓓ 800,000 = ...80........ Ten Thousands

3 Match:

ⓐ Five hundred two thousand	3	520,000 [1]
ⓑ Five hundred twenty thousand	1	2,500,000 [2]
ⓒ Two hundred five thousand	4	502,000 [3]
ⓓ Two million, five hundred thousand	2	205,000 [4]

Lessons 3&4 Many Forms to Write Numbers Composing and Decomposing

1 Write the following numbers in word form:

a) 7,200,150,208: Seven milliard, two hundred million, one hundred fifty thousand, two hundred eight.

b) 400,300,200: Four hundred million, three hundred thousand, two hundred.

c) 1,500,000: One million, five hundred thousand.

d) 20,050,003: Twenty million, fifty thousand, three.

e) 4,000,000,000 + 6,000,000 + 20,000 + 300 + 20 + 6: Four milliard, six million, twenty thousand, three hundred twenty-six.

f) 2,000,000,000 + 30,000,000 + 700,000 + 600: Two milliard, thirty million, seven hundred thousand, six hundred.

g) 200,000,000 + 700,000: Two hundred million, seven hundred thousand.

2 **Write the following numbers in standard form:**

ⓐ Five hundred million, twenty thousand, fifty: 500,020,050

ⓑ Four milliard, seven million, five thousand, nine: 4,007,005,009

ⓒ Eighteen million, ninety thousand: 18,090,000

ⓓ One milliard, five hundred twenty thousand, forty : 1,000,520,040

ⓔ 8,000,000,000 + 50,000,000 + 60,000 + 300 + 7 = 8,050,060,307

ⓕ 9,000,000,000 + 800,000 + 300 = 9,000,800,300

ⓖ 9,000,000,000 + 30,000,000 + 60,000 + 20 = 9,030,060,020

ⓗ 3,000,000,000 + 300,000 = 3,000,300,000

3 **Write the expanded form of the following numbers:**

ⓐ 400,120,603 = 400,000,000 + 100,000 + 20,000 + 600 + 3

ⓑ 5,200,090,050 = 5,000,000,000 + 200,000,000 + 90,000 + 50

ⓒ 20,750,600 = 20,000,000 + 700,000 + 50,000 + 600

ⓓ 250,000,524 = 200,000,000 + 50,000,000 + 500 + 20 + 4

ⓔ Six milliard, eight hundred fifteen million, four hundred thousand, thirty = 6,000,000,000 + 800,000,000 + 10,000,000 + 5,000,000 + 400,000 + 30

ⓕ Nine milliard, thirty-five million, nine hundred five thousand, three hundred, six = 9,000,000,000 + 30,000,000 + 5,000,000 + 900,000 + 5,000 + 300 + 6

ⓖ One hundred ninety million, six hundred twenty-four thousand, seventeen = 100,000,000 + 90,000,000 + 600,000 + 20,000 + 4,000 + 10 + 7

ⓗ Sixty-three million, five hundred, ninety-seven = 60,000,000 + 3,000,000 + 500 + 90 + 7

4 Complete the following table:

	Composed Numbers (Standard Form)	Decomposed Numbers (Expanded Notation)
a	300,250,102	(3 X 100,000,000) + (2 X 100,000) + (5 X 10,000) + (1 X 100) + (2 X 1)
b	7,050,000,865	(7 x 1,000,000,000) + (5 x 10,000,000) + (8 x 100) + (6 x 10) + (5 X 1)
c	3,006,080,500	(3 x 1,000,000,000) + (6 x 1,000,000) + (8 x 10,000) + (5 x 100)
d	2,090,807,376	(2 X 1,000,000,000) + (9 X 10,000,000) (8 X 100,000) + (7 X 1,000) + (3 X 100) + (7 X 10) + (1 X 6)
e	3,600,053,080	(3 X 1,000,000,000) + (6 X 100,000,000) + (5 X 10,000) + (3 X 1,000) + (8 X 10)
f	256,009,483	(2 X 100,000,000) + (5 X 10,000,000) (6 X 1,000,000) + (9 X 1,000) + (4 X 100) + (8 x 10) + (3 X 1)

5 Use the place value tables to help you write the following numbers in different forms:

a

Milliards	Millions			Thousands			Ones		
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones
8	0	0	7	2	0	6	0	5	9

1. Standard Form: 8,007,206,059 .
2. Word Form: Eight milliard, seven million, two hundred six thousand, fifty-nine. .
3. Expanded Form: 8,000,000,000 + 7,000,000 + 200,000 + 6,000 + 50 + 9 .
4. Expanded Notation: (8 x 1,000,000,000) + (7 x 1,000,000) + (2 x 100,000) + (6 x 1,000) + (5 x 10) + (9 x 1) .

b

Milliards	Millions			Thousands			Ones		
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones
	9	2	0	7	0	2	8	0	0

1. Standard Form: 920,702,800 .
2. Word Form: Nine hundred twenty million, seven hundred two thousands, eight hundred. .
3. Expanded Form: 900,000,000 + 20,000,000 + 700,000 + 2,000 + 800 .
4. Expanded Notation: (9 x 100,000,000) + (2 x 10,000,000) + (7 x 100,000) + (2 x 1,000) + (8 x 100) .

c

Milliards	Millions			Thousands			Ones		
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones
		3	9	8	0	0	2	0	2

1. Standard Form: 39,800,202 .
2. Word Form: Thirty-nine million, eight hundred thousand, two hundred two.
3. Expanded Form: 30,000,000 + 9,000,000 + 800,000 + 200 + 2 .
4. Expanded Notation: (3 x 10,000,000) + (9 x 1,000,000) + (8 x 100,000) + (2 x 100) + (2 x 1) .

d

Milliards	Millions			Thousands			Ones		
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones
			2	8	9	0	1	0	5

1. Standard Form: 2,890,105 .
2. Word Form: Two million, eight hundred ninety thousand, one hundred five.
3. Expanded Form: 2,000,000 + 800,000 + 90,000 + 100 + 5 .
4. Expanded Notation: (2 x 1,000,000) + (8 x 100,000) + (9 x 10,000) + (1 x 100) + (5 x 1) .

6 Choose the correct answer:

a. The number 35,200,810 in word form is ....

(thirty-five thousand, two hundred eighty-one
or thirty-five million, two hundred thousand, eight hundred, ten
or three hundred fifty-two million, eight hundred, ten
or thirty-five million, two thousand, eight hundred, ten)

(b) Six hundred and fifty million, thirteen thousand, five hundred, twenty-six

= **650,013,526** **(In standard form)**

(605,130,516 or 605,013,516 or 650,013,526 or 6,513,516)

(c) 7,000,000,000 + 400,000,000 + 2,000 + 30 = **7,400,002,030**

(In standard form)

(740,002,030 or 7,400,002,030 or 740,002,030 or 7,423)

(d) 150,000,230 = **100,000,000 + 50,000,000 + 200 + 30** **(In expanded form)**

(100,000,000 + 5,000,000 + 200 + 30 or 10,000,000 + 50,000,000 + 200 + 30

or 100,000,000 + 50,000,000 + 200 + 30 or 100,000 + 50,000 + 20 + 3)

(e) 8,000,000,000 + 20,000,000 + 800,000 + 2,000 + 80 = **8,020,802,080**

(82,828 or 8,280,280 or 8,020,802,080 or 80,280,080)

(f) (6 X 1,000,000,000) + (6 X 10,000,000) + (6 X 10,000) + (6 X 100)

+ (6 X 10) = **6,060,060,660**

(6,060,060,660 or 660,060,660 or 6,660,000,660 or 6,666)

(g) 3,000,000,000 + 50,000,000 + 12,000 + 245 = **3,050,012,245**

(3,512,245 or 3,512,245 or 3,512,000,245 or 3,050,012,245)

(h) 5,000,000,000 + 500,000,000 + 50,000 + 500 = **5,500,050,500**

(5,555 or 5,000,550,500 or 5,500,050,500 or 5,550,000,500)

(i) Three hundred five million, seven hundred thousand, sixteen = ...

(350,716,000 or 350,700,016 or 305,700,160 or 305,700,016)

(j) Five milliard, six million, nine thousand, seven = **5,006,009,007**

(5,697 or 5,006,009,007 or 5,060,090,070 or 5,600,900,700)

(k) (3 X 100,000,000) + (3 X 10,000,000) + (3 X 100,000) + (3 X 10,000)

+ (3 X 100) + (3 X 10) = **330 million, 330 thousand, 330**

(33 million, 33 thousand, 33 or 303 million, 303 thousand, 303

or 330 million, 330 thousand, 330 or 333 thousands, 333)

Assessment 2 on Lessons 3&4

Unit 1

1 Choose the correct answer:

ⓐ 350,000,350 = ... **(In word form)**

(three hundred fifty thousand, three hundred, fifty or thirty-five million, three hundred, fifty or three hundred fifty million, three hundred, fifty or fifty-three million, thirty-five)

ⓑ (4 X 1,000,000, 000) + (5 X 10,000,000) + (3 X 1,000,000) + (4 X 1,000) + (5 X 100) + (3 X 1) = ...**4,053,004,503** **(In standard form)**

(453,453 or 4,053,004,503 or 4,053,000,453 or 4,530,045,003)

ⓒ Four hundred thirty-five million, four hundred thousand, three hundred, five = ...**435,400,305**... . **(In standard form)**

(435,435 or 435,400,350 or 435,040,305 or 435,400,305)

ⓓ 200,000,000 + 60,000,000 + 20,000 + 6,000 + 20 + 6 = ...**260,026,026**... . **(In standard form)**

(206,206,206 or 260,026,026 or 26,026,206 or 26,626)

ⓔ The value of the digit 8 in 180,302,201 is ...**80,000,000**... .

(8,000,000,000 or 800,000,000 or 80,000,000 or 8,000,000)

2 Complete the following:

ⓐ The number 5,005,050,500: **(In word form)**

...........**Five milliard, five million, fifty thousand, five hundred**...........

....

ⓑ 4,000,000,000 + 30,000,000 + 900,000 + 5,000 + 70

= (4 X **1,000,000,000**) + (3 x ...**10,000,000**...) + (9 X ......**100,000**......)

+ (5 X ......**1,000**......) + (7 X ......**10**......).

c) The place value of the digit 3 in 80,234,256 is Ten Thousands.

d) If the digit 5 is in the Millions place, then its value = (5 x 1,000,000).

e) Seven hundred million, seventy thousand = (7 X 100,000,000) + (7 X 10,000).

3 Match:

a) Three milliard, three thousand
b) (3 X 1,000,000,000) + (3 X 10)
c) 300,000,300
d) Three hundred thousand, thirty
e) (3 X 100,000) + (3 X 1,000)

1. Three hundred million, three hundred
2. 3,000,003,000
3. Three hundred, three thousand
4. 3,000,000,030
5. (3 x 100,000) + (3 X 10)

(Answers: a – 2, b – 4, c – 1, d – 5, e – 3)

4 Use the place value table to help you write the following number in different forms:

Milliards	Millions			Thousands			Ones		
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones
3	0	9	0	2	0	0	2	4	0

1. Standard Form: 3,090,200,240.
2. Word Form: Three milliard, ninety million, two hundred thousand, two hundred forty.
3. Expanded Form: 3,000,000,000 + 90,000,000 + 200,000 + 200 + 40.
4. Expanded Notation: (3 x 1,000,000,000) + (9 x 10,000,000) + (2 x 100,000) + (2 x 100) + (4 x 10).

Assessment on Concept 1

1 Choose the correct answer:

ⓐ The value of the digit 3 in the Ten Thousands place is ....**30,000**........ .
(30 or 3,000 or 30,000 or 300,000)

ⓑ The value of the digit 2 in 6,326,457 is ....**20,000**........ .
(200 or 2,000 or 20,000 or 2,000,000)

ⓒ **4** milliard + **6** million + **54** thousand + **28** = **4,006,054,028**
(8,204,506,004 or 4,600,540,280 or 465,428 or 4,006,054,028)

ⓓ Six million, six thousand = ...**6,006,000**........
(606,000 or 6,600,000 or 6,060,000 or 6,006,000)

2 Complete the following:

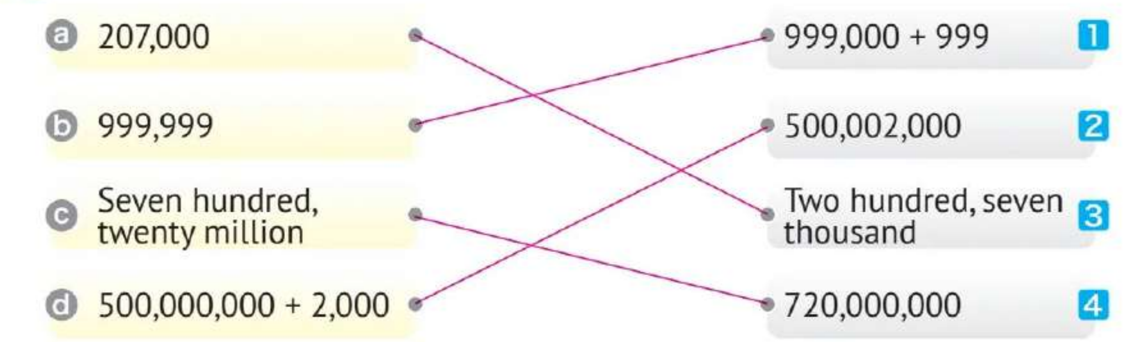
ⓐ (5 X 100,000,000) + (4 X 10,000) + (6 X 10) = ...**500,040,060**....

ⓑ The value of the digit **3** in the ....**Ten Millions**.... place = 30,000,000.

ⓒ Three hundred twenty-four thousand, seventy-three **(In standard form)**
= ....**324,073**........................ .

ⓓ 400 Thousands = ...**4,000**........ Hundreds.

3 Match:



Concept 1.2 Using Place Value

Lessons 5–7

Comparing Big Numbers
Comparing Numbers in Multiple Forms
Descending and Ascending Numbers

1 Complete the following table using (< , = or >):

a	20,000,900	>	20,000,009
b	45 million ,45 thousand	=	45,045,000
c	(8 X 10,000,000) + (8 X 100)	>	80,000,008
d	(6X 1,000,000,000) + (6 X 1)	=	6,000,000,006
e	5,500,550	<	550 million, 550
f	The smallest 9-digit number	<	1 X 1,000,000,000
g	Three hundred, thirty three million	<	3,330,000,000
h	100,000,000	>	The greatest 8-digit number
i	The smallest 9-digit number	=	1 X 100,000,000
j	(3 X 100,000,000) + (3 X 1)	=	Three hundred million, three
k	Two milliard, five hundred five thousand, fifty	<	2,550,000,050

2 Arrange the following numbers in an ascending order:

a) 25,030,000 , 550,000 , 5,000 , 45,000

5,000 , 45,000 , 550,000 , 25,030,000

b) 360,548 , 205,687 , 545,352 , 154,200

154,200 , 205,687 , 360,548 , 545,352

c) 557,859 , 557,895 , 557,589 , 557,985

557,589 , 557,859 , 557,895 , 557,985

d) 500,005 , 505,550 , 500,000 , 500,500

500,000 , 500,005 , 500,500 , 505,550

3 Arrange the following numbers in a descending order:

ⓐ 909,909 , 900,000 , 999,999 , 900,990

999,999 , 909,909 , 900,990 , 900,000

ⓑ 55,125 , 55,512 , 55,152 , 55,251

55,512 , 55,251 , 55,152 , 55,125

ⓒ 300,002,100 , 200,030,001 , 300,020,010 , 200,300,100

300,020,010 , 300,002,100 , 200,300,100 , 200,030,001

4 Arrange the following numbers in an ascending order.
Write the numbers in standard form:

Number	Standard Form	Order
Five hundred thirty million, four hundred, fifty	530,000,450	4
Five hundred three million, four hundred thousand, five	503,400,005	3
Five hundred thirty million, four hundred five thousand	530,405,000	5
Five million, thirty thousand, four hundred, fifty	5,030,450	1
Fifty million, thirty thousand, forty-five	50,030,045	2

5 Arrange the following numbers in a descending order.
Write the numbers in standard form:

Number	Standard Form	Order
Ninety-nine million, nine hundred ninety thousand, ninety	99,990,090	5
Nine milliard, ninety	9,000,000,090	2
Nine hundred, ninety-nine million	999,000,000	3
Nine milliard, ninety thousand	9,000,090,000	1
Nine hundred million, nine hundred thousand, nine hundred	900,900,900	4

6 **Arrange the following numbers in an ascending order.**
Write the numbers in standard form:

Number	Standard Form	Order
Five milliard, three hundred thousand, nine	5,000,300,009	3
(5 X 1,000,000,000) + (3 X 100,000) + (9 X 10)	5,000,300,090	4
5,000,000,000 + 300,000 + 900	5,000,300,900	5
5,000,003,900	5,000,003,900	2
Five milliard, three thousand, nine	5,000,003,009	1

7 **Arrange the following numbers in a descending order.**
Write the numbers in standard form:

Number	Standard Form	Order
1,000,000,000 + 500,000 + 3,000 + 200 + 5	1,000,503,205	4
(1 X 1,000,000,000) + (3 X 10,000) + (2 X 100) + (5 X 10)	1,000,030,250	5
1 milliard, 50 million, 325 thousand	1,050,325,000	2
1,500,030,250	1,500,030,250	1
1 milliard, 32 million, 5 thousand	1,032,005,000	3

8 **Choose the correct answer:**

a) The value of the digit in the Hundred Thousands place (<) the value of the digit in the Millions place. (< or = or >)

b) 50 Ten Millions (<) 5 Milliards (< or = or >)

c) 450,000,450 (>) Forty-five million, forty-five (< or = or >)

d) 10,000,000 > 3 millions (3,000,000 or 2,999,999 or 10,000,000)

e) 40 millions > 35,202,000 > 30 millions (350,220,000 or 35,202,000 or 3,022,000)

f) 792,689 < 795,002 (792,689 or 796,002 or 795,020)

g) 280 > 279 (219 or 269 or 280)

h) 75,000 > 70,500 (75,000 or 70,050 or 70,005)

Assessment 3 on Lessons 5–7

Unit 1

1 Choose the correct answer:

a) Two milliard, three thousand, three = **2,000,003,003** **(In standard form)**

(2,300,300 or 2,000,003,003 or 2,000,303,000 or 2,003,003)

b) The digit 8 in 214,284,697 is in the **Ten Thousands** place.

(Ones or Tens or Ten Thousands or Ten Millions)

c) 200,450 > **200,045**

(245,005 or 204,500 or 245,000 or 200,045)

d) 100,000 < **1,000,000** (98,765 or 99,999 or 1,000,000 or 99,000)

2 Complete the following:

a) (9 X 100,000,000) + (2 X 100,000) + (6 X 1,000) + (8 X 1)

= **900,000,000** + **200,000** + **6,000** + **8**

b) 400 Thousands + 500 Tens = **405,000**

c) The place value of the digit "0" in 9,025,123

is **Hundred Thousand** .

d) The value of the digit 5 in the Millions place = **1,000 times** the value of the digit 5 in the **Thousands** place.

e) (8 X 1,000,000) + (8 X 1,000) = **(In word form)**

Eight million, eight thousand .

3 Arrange the following numbers in an ascending order:

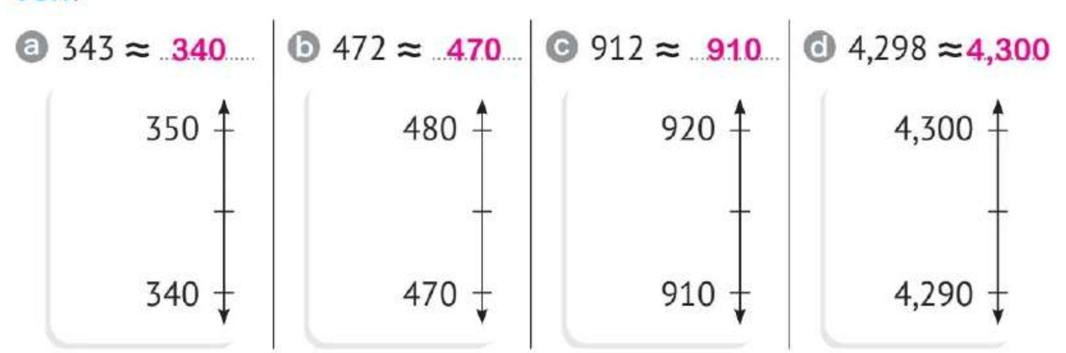
10,025,000 , 10,002,005 , 10,200,050 , 10,020,500

10,002,005 , **10,020,500** , **10,025,000** , **10,200,050**

Lesson 8 Rounding Rules

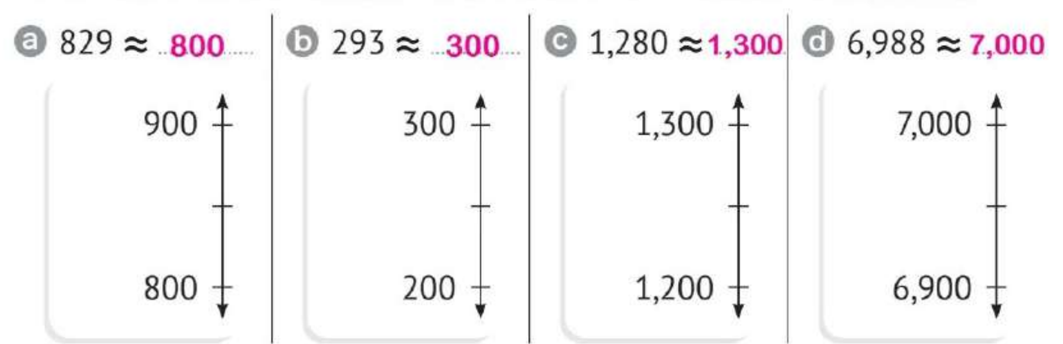
1 Write down the midpoint of the number line. Then, locate each number on the number line. Round each number to the nearest Ten:

ⓐ 343 ≈ 340 ⓑ 472 ≈ 470 ⓒ 912 ≈ 910 ⓓ 4,298 ≈ 4,300



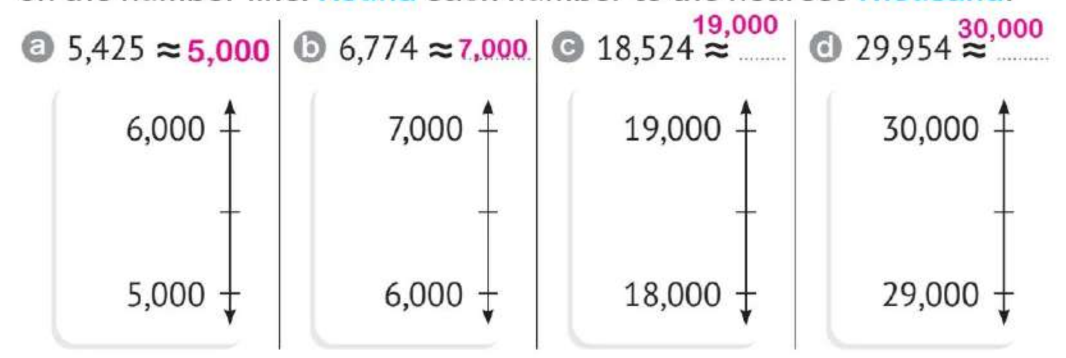
2 Write down the midpoint of the number line. Then, locate each number on the number line. Round each number to the nearest Hundred:

ⓐ 829 ≈ 800 ⓑ 293 ≈ 300 ⓒ 1,280 ≈ 1,300 ⓓ 6,988 ≈ 7,000



3 Write down the midpoint of the number line. Then, locate each number on the number line. Round each number to the nearest Thousand:

ⓐ 5,425 ≈ 5,000 ⓑ 6,774 ≈ 7,000 ⓒ 18,524 ≈ 19,000 ⓓ 29,954 ≈ 30,000



4 Write down the midpoint of the number line. Then, locate each number on the number line. Round each number to the nearest Hundred Thousand:

ⓐ 178,652 ≈ 200,000

200,000
100,000

ⓑ 462,685 ≈ 500,000

500,000
400,000

ⓒ 972,821 ≈ 1,000,000

1,000,000
900,000

5 Write down the midpoint of the number line. Then, locate each number on the number line. Round each number to the nearest Ten Million:

ⓐ 45,284,564 ≈ 50,000,000

50,000,000
40,000,000

ⓑ 2,326,120 ≈ 0

10,000,000
0

6 Write down the midpoint of the number line. Then, locate each number on the number line. Round each number to the nearest Milliard:

ⓐ 5,205,452,152 ≈ 5,000,000,000

6,000,000,000
5,000,000,000

ⓑ 4,815,600,002 ≈ 5,000,000,000

5,000,000,000
4,000,000,000

7 Round the following numbers to the nearest 10:

a) 54 ≈ 50
b) 76 ≈ 80
c) 845 ≈ 850
d) 967 ≈ 970
e) 7 ≈ 10
f) 2,595 ≈ 2,600
g) 75,999 ≈ 76,000
h) 99,999 ≈ 100,000

8 Round the following numbers to the nearest 1,000:

a) 7,869 ≈ 8,000
b) 6,289 ≈ 6,000
c) 398 ≈ 0
d) 9,964 ≈ 10,000
e) 29,456 ≈ 29,000
f) 99,598 ≈ 100,000
g) 99,900 ≈ 100,000
h) 456,400 ≈ 456,000

9 Complete the following:

a) 4,545 ≈ 5,000 *(To the nearest 1,000)*
b) 258,654 ≈ 300,000 *(To the nearest 100,000)*
c) 299,999 ≈ 300,000 *(To the nearest 10)*
d) 1,000,000 ≈ 1,000,000 *(To the nearest 100,000)*
e) 89,541 ≈ 90,000 *(To the nearest 10,000)*
f) 654 ≈ 650 *(To the nearest 10)*
g) 8,840 ≈ 9,000 *(To the nearest 1,000)*
h) 2,458,235 ≈ 2,000,000 *(To the nearest 1,000,000)*
i) 458,605 ≈ 459,000 *(To the nearest 1,000)*
j) 7,456,572 ≈ 7,000,000 *(To the nearest 1,000,000)*
k) 754 + 245 = 999 ≈ 1,000 *(To the nearest 10)*
l) 2,856 + 6,410 = 9,266 ≈ 9,000 *(To the nearest 1,000)*
m) 876 – 225 = 651 ≈ 700 *(To the nearest 100)*
n) 15,000 – 125 = 14,875 ≈ 15,000 *(To the nearest 1,000)*

10 Choose the correct answer:

ⓐ 980 ≈ ......**1,000**...... *(To the nearest 100)* (980 or 900 or 990 or 1,000)

ⓑ 906,456 ≈ ....**900,000**.......... *(To the nearest 100,000)*

(906,000 or 1,000,000 or 910,000 or 900,000)

ⓒ 99,768 ≈ ....**100,000**.......... *(To the nearest 1,000)*

(99,800 or 100,000 or 90,000 or 99,000)

ⓓ 6,450,450, ≈ ....**6,000,000**.......... *(To the nearest 1,000,000)*

(6,500,000 or 5,000,000 or 6,000,000 or 7,000,000)

ⓔ 258 ≈ 300 *(To the nearest* ......**100**......*)* (10 or 100 or 1000 or 10,000)

ⓕ 6,587 ≈ 6,600 *(To the nearest* ......**100**......*)* (10 or 100 or 10,000 or 1,000)

ⓖ 295,120 ≈ 300,000 *(To the nearest* ......**10,000**......*)*

(100 or 1,000 or 10,000 or 10,000,000)

ⓗ The **largest** whole number that can be rounded to the nearest **10**, so that the result is 450 is ....**454**.......... .

(460 or 458 or 454 or 450)

ⓘ The **smallest** whole number that can be rounded to the nearest **100**, so that the result is 1,200 is ....**1,150**.......... .

(1,159 or 1,299 or 1,150 or 1,100)

Assessment 4 on Lesson 8

Unit 1

1 Choose the correct answer:

ⓐ 7,542 ≈ ......**8,000**...... *(To the nearest Thousand)*
(7,500 or 7,000 or [8,000] or 75,000)

ⓑ ......**4,950**...... ≈ 5,000 *(To the nearest Hundred)*
(5,490 or 5,950 or [4,950] or 4,590)

ⓒ 6,566 ≈ 6,600 *(To the nearest* ...**100**... *)* (10 or [100] or 1,000 or 10,000)

ⓓ The number of whole number that can be rounded to the nearest 10, so that the result is 70 is ......**10**...... . (5 or [10] or 11 or 20)

ⓔ One million ......**<**...... 9,999,999 ([<] or = or >)

2 Complete the following:

ⓐ Eight hundred ninety-six million, three thousand, fifteen **(In expanded form)**
= **800,000,000** + **90,000,000** + **6,000,000** + ...**3,000**... + ...**10**... + ...**5**... .

ⓑ The place value of the digit 5 in 5,069,420,000
is ...**Milliards**... .

ⓒ 6,475 + 4,125 = ...**10,600**...... ≈ ......**11,000**...... *(To the nearest 1,000)*

ⓓ The value of the digit 7 in the Milliards place = **7,000,000,000**

ⓔ ......**549**...... ≈ 500 *(To the nearest 100)*

"Complete by writing the greatest whole number possible"

3 Arrange the following numbers in an ascending order:

Three hundred thirty thousand , 30,000,030,000 ,
30,030,000 , Thirty million

Three hundred thirty thousand , **thirty million** , **30,030,000** , **3,000,030,000**

Assessment on Concept 2

Unit 1

1 Choose the correct answer:

a) 210,753 > ...200,753... (753,200 or 210,755 or 217,053 or 200,753)

b) 40 ten million [<] 4 milliard (< or = or > or ≥)

c) The value of the digit **3** in the Hundred Thousands place [<] the value of the digit **3** in the Millions place. (< or = or > or ≥)

d) 471,326 ≈ ...471,000... **(To the nearest Thousand)**

(471,000 or 470,000 or 472,000 or 1,000)

2 Complete the following:

a) ...3,200... is ten times more than 320.

b) 95,460,813 ≈ ...95,500,000... **(To the nearest 100,000)**

c) 2,000,000 + 40,000 + 500 + 6 = ...2,040,506...

d) 5,182 ≈ ...5,000... **(To the nearest 1,000)**

3 a) Arrange the following numbers in an ascending order:

3,001,328,391 , 3,999,830 , 3,999,992 , 3,010,001,034

...3,999,830... , ...3,999,992... , 3,001,328,391 , 3,010,001,034

b) Complete using (< , = or >):

1. Four hundred million, four [=] (4 X 100,000,000) + (4 X 1)
2. 7,000,707,007 [>] seven milliard, seven hundred seventy-seven

Unit 2 Addition and Subtraction Strategies

Concept 2.1 Using Addition and Subtraction Strategies

Lesson 1 Properties of Addition

1 **Complete the following, then write the addition property used:**

ⓐ 7 + 6 = ...6... + 7 "...Commutative... *Property*"

ⓑ (7 + ...9...) + 4 = 7 + (9 + 4) "...Associative... *Property*"

ⓒ 8 + 0 = ...8... "...Identity Element... *Property*"

ⓓ 27 + 19 = 19 + ...27... "...Commutative... *Property*"

ⓔ 0 + ...9... = 9 "...Identity Element... *Property*"

ⓕ (41 + 27)+ 21 + 94 = ...41... + (27 + 21) + ...94...

"...Associative... *Property*"

ⓖ ...39... + 18 = 18 + 39 "...Commutative... *Property*"

ⓗ 28 + ...0... = 28 "...Identity Element... *Property*"

ⓘ (...300... + 125) + 417 = 300 + (...125... + 417)

"...Associative... *Property*"

2 **Complete the following problems using the properties of addition, then write the property used:**

ⓐ 15 + 27 + 85 = ...15... + 85 + 27 "Commutative *Property*"

= (...15... + ...85...) + ...27... "Associative... *Property*"

= ...100... + ...27... = ...127...

ⓑ 755 + 615 + 245 = 755 + **245** + 615 "**Commutative** Property"

= (**755** + **245**) + **615** "**Associative** Property"

= **1,000** + **615** = **1,615**

ⓒ 42 + 908 + 92 = 42 + (**908** + **92**) "**Associative** Property"

= **42** + **1,000** = **1,042**

ⓓ 244 + 0 + 256 = 0 + **244** + 256 "**Commutative** Property"

= 0 + (**244** + **256**) "**Associative** Property"

= **0** + **500** "**Identity Element** Property"

= **500**

ⓔ 244 + 0 = 0 + **244** "**Commutative & Identity Element** Property"

= **244**

3 Choose the correct answer:

(Identity Element or Commutative or Associative)

ⓐ 9 + 2 = 2 + 9 "**Commutative** Property"

ⓑ (100 + 117) + 25 = 100 + (117 + 25) "**Associative** Property"

ⓒ 245 + 0 = 0 + 245 "**Identity Element** Property"

ⓓ 8 + (5 + 12) = (8 + 5) + 12 "**Associative** Property"

ⓔ 205 + 15 = 15 + 205 "**Commutative** Property"

ⓕ 0 + 215 = 215 + 0 = 215 "**Identity Element** Property"

ⓖ 4 + 3 + (7 + 6) = 4 + (3 + 7) + 6 "**Associative** Property"

ⓗ 45 + 0 = 45 "**Identity Element** Property"

ⓘ 42 + 15 + 85 = 42 + (15 + 85) = 42 + 100 = 142 "**Associative** Property"

ⓙ 45 + 55 + 123 + 27 = (45 + 55) + (123 + 27) = 100 + 250 = 350

"**Associative** Property"

Assessment 1 on Lesson 1

Unit 2

1 Complete the following:

a) 45 + 65 = 65 + ... **45** ..... "**Commutative** Property"

b) (85 + 48) + 52 = ... **85** ..... + (48 + 52) " **Associative** Property"

c) The **value** of the digit 8 in 28,147,256 is **8,000,000**

d) 25,458 ≈ ..... **30,000** ..... *(To the nearest 10,000)*

e) 732 + ... **0** ..... = 732 "**Identity element** Property"

2 Choose the correct answer:

a) 421 + 45 = 45 + 421 "**Commutative** Property"

(Identity Element or [Commutative] or Associative)

b) Milliard is the smallest number formed from ..... **10** ..... digits.

(7 or 8 or 9 or [10])

c) 25,452 ≈ 30,000 *(To the nearest ..... **10,000** .....)*

(100 or 1,000 or [10,000] or 100,000)

d) 25 + (75 + 26) = (25 + 75) + 26 " **Associative** Property"

(Identity Element or Commutative or [Associative])

e) Five hundred fifty million, five = **550,000,005** ..... **(In standard form)**

(500,055 or 550,005 or 550,005,000 or [550,000,005])

3 Complete using (< , = or >):

a) Three million, five hundred **>** 3,000,050

b) 370,205 **>** (3 X 100,000) + (7 X 1,000) + (2 X 100) + (5 x 1)

c) 909,990 **<** 990,090

d) 400,300,200 **>** 400 + 300 + 200

4 Arrange the following numbers in an ascending order:

3,584,852 , 3,458,582 , 3,854,852 , 3,548,258

..... **3,458,582** ..... , ... **3,548,258** ..... , ... **3,584,852** ..... , ... **3,854,852** .....

Theme 1

Lesson 2 Addition with Regrouping

1 Use the Rounding Strategy, then find the result:

a) 76 + 42 (To the nearest 10) → 80 + 40 = ...120....

b) 84 + 37 (To the nearest 10) → ....80.... + ...40.... = ...120....

c) 96 – 24 (To the nearest 10) → ....100.... – ....20.... = ...80....

d) 154 + 318 (To the nearest 100) → ....200.... + ...300.... = ...500....

e) 368 - 318 (To the nearest 100) → ....400.... – ....300.... = ...100....

f) 2,159 + 3,769 (To the nearest 1,000)

→ ....2,000.... + ...4,000.... = ...6,000....

g) 77,981 – 69,328 (To the nearest 1,000)

→ ....78,000.... – ....69,000.... = ...9,000....

2 Find the result of each of the following:

a	b	c
65,742	497,864	974,356
+ 24,953	+ 153,692	+ 25,644
....90,695....	....651,556....	....1,000,000....

d	e	f
124,629	845,656	999,999
+ 298,680	+ 975,546	+ 200,001
....423,309....	....1,821,202....	....1,200,000....

g) 225,564 + 347,660 = ...573,224....

h) 341,250 + 219,263 = ...560,513....

i) 3,224,659 + 6,418,256 = ...9,642,915....

j) 332,456,989 + 667,543,011 = ...1,000,000,000....

3 Complete the following tables:

(Determine which of the estimates is closest to the actual solution)

Problem	To the nearest 10	To the nearest 100	To the nearest 1,000
ⓐ 24,456	24,460	24,500	24,000
+ 13,428	+ 13,430	+ 13,400	+ 13,000
37,884	37,890 (✓)	37,900 ( )	37,000 ( )

Problem	To the nearest 10	To the nearest 100	To the nearest 1,000
ⓑ 256,634	256,630	256,600	257,000
+ 885,365	+ 885,370	+ 885,400	+ 885,000
1,141,999	1,142,000 (✓)	1,142,000 (✓)	1,142,000 (✓)

Problem	To the nearest 10	To the nearest 100	To the nearest 1,000
ⓒ 2,256	2,260	2,300	2,000
+ 3,815	+ 3,820	+ 3,800	+ 4,000
6,071	6,080 (✓)	6,100 ( )	6,000 ( )

Problem	To the nearest 10	To the nearest 100	To the nearest 1,000
ⓓ 125,278	125,280	125,300	125,000
+ 289,132	+ 289,130	+ 289,100	+ 289,000
414,410	414,410 (✓)	414,400 ( )	414,000 ( )

4 Answer the following:

ⓐ **Nada has 7,245 piasters, and Ahmed has 9,372 piasters.**

What is the sum of what Nada and Ahmed have together?

Explain your steps, and then check the reasonableness of your answer.

Estimate (Round to the nearest 100):

9,400 + 7,200 = 16,600

Actual answer: 9,372 + 7,245 = 16,617

b The number of girls in a school is 458 and the number of boys is 367.
What is the total number of students in this school?
Explain your steps, and then check the reasonableness of your answer.

Estimate (Round to the nearest 10):

370 + 460 = 830

Actual answer: 458 + 367 = 825

c The desert silver ant is the fastest ant on the planet. It can move about 855 mm per second. If this ant can maintain this speed for two seconds, how far will it go?
Explain your steps, and then check the reasonableness of your answer.

Estimate (Round to the nearest 100):

900 + 900 = 1,800

Actual answer: 855 + 855 = 1,710

d The distance between Aswan and Assiut is 511 km, and the distance between Assiut and Alexandria is 619 km.
How far is the distance between Alexandria and Aswan?
Explain your steps, and then check the reasonableness of your answer.

Estimate (Round to the nearest 100):

500 + 600 = 1,100

Actual answer: 511 + 619 = 1,130

e 686 tourists visited the Egyptian Museum on Sunday, and 621 tourists visited it on Monday.
How many tourists visited the museum in the two days?
Explain your steps, and then check the reasonableness of your answer.

Estimate (Round to the nearest 100):

700 + 600 = 1,300

Actual answer: 686 + 621 = 1,307

Assessment 2 on Lesson 2

Unit 2

1 Complete the following:

a) 25 + 99 = 25 + **99**

b) 300,750 = (3 X **100,000**) + (7 X **100**) + (5 X **10**)

c) The **value** of the digit 9 in the Ten Millions place is **90,000,000** .

d) 8 + (7 + 9) = (8 + 7) + **9** "**Associative** *Property*"

e) 74,632 ≈ **75,000** *(To the nearest 1,000)*

2 Choose the correct answer:

a) 7,145 ≈ 7,100 *(To the nearest* **100** *)* (10 or [100] or 1,000 or 10,000)

b) (8 X 100,000,000) + (8 X 1,000) = **800,008,000** .

(88,000,000 or 808,000 or [800,008,000] or 800,800,000)

c) 56 + **56,000** = 56,056 (56 or 560 or 5,600 or [56,000])

d) 593 ≈ 600 *(To the nearest* **100** *)* (10 or [100] or 1,000 or 10,000)

e) 25 + 75 = 75 + 25 "**Commutative***Property*"

(Identity Element or [Commutative] or Associative)

3 Arrange the following numbers in a descending order:

990,909 , 9,900,990 , 100,000 , 1,000,000

9,900,990 , **1,000,000** , **990,909** , **100,000**

4 773 ships passed through the Suez Canal in January, and 375 ships crossed it in February. Find the number of ships that passed through it in the two months, Explain your steps and then check the reasonableness of your answer.

Estimate (Use rounding to the nearest **100**):

800 + 400 = 1,200

Actual answer:

773 + 375 = 1,148

Theme 1

Lesson 3 Subtraction with Regrouping

1 **Find the result of each of the following:**

a) 65,438 − 29,278 = 36,160	b) 700,976 − 158,295 = 542,681	c) 250,039 − 72,278 = 177,761
d) 706,007 − 520,055 = 185,952	e) 427,239 − 209,136 = 218,103	f) 100,000 − 1 = 99,999

g) 725,428 − 219,428 = 506,000

h) 401,800 − 84,658 = 317,142

i) 7,602,630 − 6,583,108 = 1,019,522

j) 125,324,725 − 89,000,999 = 36,323,726

2 **Complete the following tables:**

(Determine which of the estimates is closest to the actual solution)

Problem	To the nearest 10	To the nearest 100	To the nearest 1,000
a) 8,625	8,630	8,600	9,000
− 5,273	− 5,280	− 5,300	− 5,000
3,352	3,350 (✓)	3,300 ( )	4,000 ( )

Problem	To the nearest 10	To the nearest 100	To the nearest 1,000
b) 25,365	25,370	25,400	25,000
− 17,824	− 17,820	− 17,800	− 18,000
7,541	7,550 (✓)	7,600 ( )	7,000 ( )

Problem	To the nearest 10	To the nearest 100	To the nearest 1,000
ⓒ 57,685	57,690	57,700	58,000
– 8,998	– 9,000	– 9,000	– 9,000
48,687	48,690 (✓)	48,700 ( )	49,000 ( )

Problem	To the nearest 10	To the nearest 100	To the nearest 1,000
ⓓ 632,089	632,090	632,100	632,000
– 528,873	– 528,870	– 528,900	– 529,000
103,216	103,220 (✓)	103,200 ( )	103,000 ( )

3 Answer the following:

ⓐ Some students wanted to plant 621 trees in their village.

If they planted 476 trees, how many trees are left?

621 – 476 = 145 trees

ⓑ Sarah had 1,270 pounds, she bought a dress for 630 pounds.

How many pounds are left with Sarah?

1,270 – 630 = 640 pounds

ⓒ A primary school with 1,028 students, 542 of them are girls.

How many boys are there in this school?

1,028 – 542 = 486 boys

d Eman has 3,256 pounds, and Sameh has 2,804 pounds.

What is the difference between their money?

3,256 – 2,804 = 452 pounds

e The height of a tree is 1,200 cm, and the length of its shadow is 235 cm.

How much taller is the tree than its shadow?

1,200 – 235 = 965 cm

f There are 4,015 books in the school library, 725 books were borrowed by the students.

How many books are left in the library?

4,015 – 725 = 3,290 books

g A family saved 3,250 pounds to buy a TV.

If the price of the TV is 5,100 pounds, how many pounds does this family need to buy the TV?

5,100 – 3,250 = 1,850 pounds

Assessment 3 on Lesson 3

Unit 2

1 Complete the following:

ⓐ Nine milliard, five hundred thousand, four hundred: 9,000,500,400

(In standard form)

ⓑ The **place value** of the digit 6 in 56,124,248 is Millions .

ⓒ 245 + 243 = 243 + 245

ⓓ 27,957 ≈ 30,000 *(To the nearest 10,000)*

2 Choose the correct answer:

ⓐ (3 X 100,000,000) + (5 X 100,000) + (7 X 100) = 300,500,700

(300,500,700 or 357,000,000 or 300,005,700 or 300,570,000)

ⓑ 4,000,000 + 60,000 + 100 + 9 = 4,060,109

(4,619 or 64,000,109 or 40,060,109 or 4,060,109)

ⓒ 1,000,000 – 1 = 999,999 (9,999,999 or 999,999 or 99,999 or 1,000,001)

ⓓ 50 Hundred Thousands = ... Thousands. (50 or 500 or 5,000 or 50,000)

ⓔ 45 + 0 = 45 *(Identity Element Property)*

(Identity Element or Commutative or Associative or Addition)

3 Find the result of each of the following:

ⓐ	ⓑ	ⓒ	ⓓ
75,654	40,802	63,880	800,002
+ 15,257	+ 9,258	– 52,209	– 89,566
90,911	50,060	11,671	710,436

4 773 ships passed through the Suez Canal in January, and 375 ships passed in February. Find the difference between the number of ships that passed through it in the two months.

773 – 375 = 398 ships

Assessment on Concept 1

Unit 2

1 **Choose the correct answer:**

ⓐ 7 + 4 = 4 + 7 (Commutative Property)

(Identity Element or Associative or Commutative or Addition)

ⓑ 85 + (13 + 45) = (85 + 13) + 45 (58 or 45 or 13 or 85)

ⓒ 4 + 15 + 1 = 20 (19 or 16 or 20 or 10)

ⓓ The Additive Identity Element is 0 (2 or 5 or 0 or 1)

2 **Find the result:**

ⓐ 8,542 – 3,179 = 5,363

ⓑ 2,456 + 1,664 = 4,120

ⓒ 299 + 155 = 454

ⓓ 425 – 198 = 227

3 **Answer the following:**

ⓐ Mohamed bought a phone for **6,273** LE and a PC for **8,544** LE.

How much money did Mohamed pay?

6,273 + 8,544 = 14,817

ⓑ Round each number to the nearest **10**, then find the result:

154 + 156 ≈ 150 + 160 = 310

Concept 2.2 Solving Multistep Problems

Lessons 4&5 Bar Models, Variables, and Story Problems
Solving Multistep Story Problems with Addition and Subtraction

1 Solve the following equations:

(Make a bar model and then find the solution):

ⓐ $X + 125 = 207$

Solution: $x = 207 - 125$, $x = 82$

Bar Model

207	
X	125

ⓑ $X + 514 = 1,025$

Solution: 511

Bar Model

1,025	
X	514

ⓒ $2,087 + y = 7,248$

Solution: 5,161

Bar Model

7,248	
y	2,087

ⓓ $69 + y = 1,200$

Solution: 1,131

Bar Model

1,200	
y	69

ⓔ $m - 215 = 375$

Solution: 590

Bar Model

M	
215	375

ⓕ $a - 258 = 915$

Solution: 1,173

Bar Model

a	
258	915

ⓖ $542 - b = 289$

Solution: 253

Bar Model

542	
b	289

ⓗ $845 - n = 457$

Solution: 388

Bar Model

845	
n	457

ⓘ $k + 200 + 50 = 455$

Solution: 205

Bar Model

455		
k	200	50

ⓙ $75 + r + 125 = 620$

Solution: 420

Bar Model

620		
r	75	125

2 **Read the following questions. Create a bar model and an equation for each problem and then find the solution.**

ⓐ There are 1,200 ants in the colony. Some ants go out looking for food, while 700 ants dispose of the garbage outside the colony.

How many ants are searching for food?

Equation: x = 1,200 – 700 .

Solution: x = 500 .

Bar Model

1,200	
X	700

ⓑ There are 20,000 ants in the colony. 12,000 ants of them are females and the rest are males. How many male ants are there in the colony?

Equation: x = 20,000 - 12,000 .

Solution: x = 8,000 .

Bar Model

20,000	
X	12,000

ⓒ There are 12,000 species of ants. 2,500 of these species live in Africa and the rest live in other parts of the world.

How many species do not live in Africa?

Equation: x = 12,000 - 2,500 .

Solution: x = 9,500 .

Bar Model

12,000	
X	2,500

ⓓ Tariq practiced walking. On Monday, Tariq walked a number of steps, then took another 10,075 steps on Tuesday. Now, he walked a total of 78,200 steps. How many steps did he take on Monday?

Equation: x = 78,000 - 10,075 .

Solution: x = 67,925 .

Bar Model

78,200	
X	10,075

ⓔ A worker ant travelled 3,500 meters on Monday and then 2,450 meters on Tuesday to search for food. How far did the ant travel on Monday and Tuesday together?

Equation: x = 3,500 + 2,450 .

Solution: x = 5,950 .

Bar Model

x	
3,500	2,450

Unit ②

ⓕ The number of books in the school library is **890**, and the number of borrowed books is **258**. If students return all borrowed books, how many books will be in the library?

Equation: x = 890 + 258 .

Solution: x = 1,148 .

Bar Model

x	
890	258

ⓖ Mahmoud saved **250,000** piasters and got **39,000** piasters from his father. What is the sum of Mahmoud's money?

Equation: x = 250,000 + 39,000 .

Solution: x = 289,000 .

Bar Model

x	
25,000	39,000

3 Read the following story problems. Use the story problem solving steps.

ⓐ The Suez Canal extends from Port Said to the city of Suez, and its length is **193,120** meters. If a boat travels **58,620** meters every day for two days, how many more meters will it have to travel to reach the end of the canal?

58,620 + 58,620 = 117,240 meters 193,120 – 117,240 = 75,880 meters .

ⓑ The population of Tanta is **404,901** people. The population of Benha is **167,029** people, and the population of Kafr Al-Dawwar is **67,370**. What is the population of Banha and Kafr Al-Dawwar together? And what is the difference between their population and Tanta's population?

167,029 + 67,370 = 234,399 404,901 _ 234,399 = 170,502 .

ⓒ Salma was counting the ants in the colony. She counted **1,525** ants on Monday, **19,750** ants on Tuesday, and **3,705** ants on Wednesday. If there are **30,520** ants in the colony, how many ants does she still need to count?

1,525 + 19,750 + 3,705 = 24,980 ants 30,520 _ 24,980 = 5,540 ants .

ⓓ A local bakery sold **1,232** doughnuts in one day. If they sold **876** doughnuts in the morning, how many doughnuts did they sell during the rest of the day? 1,232 _ 876 = 356 doughnuts .

Assessment 4 on Lessons 4&5

Unit 2

1 Choose the correct answer:

ⓐ If x + 32 = 105, then x = 73 (137 or 73 or 173 or 37)

ⓑ The value of the digit 4 in 74,025,739 is 4,000,000

(40,000 or 400,000 or 4,000,000 or 40,000,000)

ⓒ Nine milliard, twenty thousand, fifty **(In standard form)** = 9,000,020,050

(9,020,000,050 or 9,000,020,050 or 9,000,200,500 or 925,000)

ⓓ 25 + 75 = 75 + 25 (100 or 25 or 75 or 125)

ⓔ The equation that represents the opposite bar model is W + 30 = 45

45	
w	30

(w + 30 = 45 or 30 − w = 45 or w − 30 = 45 or w + 15 = 45)

2 Complete the following:

ⓐ If y − 12 = 25, then y = 37 .

ⓑ (3 X 1,000,000) + (2 + 10,000) + (4 X 10) = 3,020,040 **(In standard form)**

ⓒ Million is the smallest number formed from 7 digits.

ⓓ 5,000 Millions = 5 Milliards.

ⓔ Using to opposite bar model:

83	
52	e

83 − e = 52

3 Creat a bar model and an equation for each problem, then find the solution:

ⓐ There are **56 students** in a class, **31** of them are boys.

What is the number of girls?

56	
a	31

Equation: 31 + a = 56 .

Solution: a = 56 − 31 = 25 girls

ⓑ There are **67 pounds**, she spent **54 pounds**.

How much is left with her?

67	
b	54

Equation: 54 + b = 67 .

Solution: b = 67 − 54 = 13 pounds

Assessment on Concept 2

Unit 2

1 Choose the correct answer:

ⓐ In the opposite bar model, y = **112** .

y	
47	65

(**[112]** or 18 or 47 or 65)

ⓑ If $21 - \chi = 7$, then χ = **14** . (28 or 21 or **[14]** or 7)

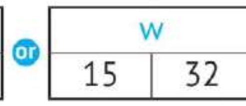
ⓒ Which of the following bar models represents the equation: $93 - w = 42$

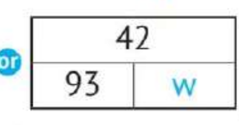
(**[**

93	
w	42

] or

15	
32	w

or 

or 

)

ⓓ The equation that represents the following bar model is **m = 25 + 31** .

m	
25	31

($m = 31 - 25$ or $13 - m = 25$ or $25 - m = 31$ or **[$m = 25 + 31$]**)

2 Answer the following:

ⓐ Hazem monitors an ant colony on the website. It contains **132,890** ants. Menna monitors two ant colonies, one with **57,999** ants and another one with **57,024** ants.

Who watches more ants, and how much is the increase?

57,999 + 57,024 = 115,023

132,890 – 115,023 = 17,867 ants .

ⓑ The population of Matrouh is **429,999** people, the population of North Sinai is **474,401** people and the population of South Sinai is **108,951** people.

How much is the population of North Sinai and South Sinai together more than the population of Matrouh?

474,401 + 108,951 = 583,352 population

583,352 – 429,999 = 153,353 population .

Unit 3 Concepts of Measurement

Concept 3.1 Metric Measurement

Lesson 1 Measuring Length

1 **Choose the best unit for measuring each of the following:**

ⓐ Insect length: **Millimeters**

(Kilometers or Meters or Centimeters or Millimeters)

ⓑ Pencil length: .... (Kilometers or Meters or Centimeters or Millimeters)

ⓒ Home height: .... (Kilometers or Meters or Centimeters or Millimeters)

ⓓ The distance between Cairo and Tanta: **Kilometers**

(Kilometers or Meters or Centimeters or Millimeters)

ⓔ Ant length: .... (Kilometers or Meters or Centimeters or Millimeters)

ⓕ Child's height: **Centimeters**

(Kilometers or Meters or Centimeters or Millimeters)

ⓖ The distance between your home and school: **Kilometers**

(Kilometers or Meters or Centimeters or Millimeters)

ⓗ School height: **Meters**

(Kilometers or Meters or Centimeters or Millimeters)

ⓘ Banana length: **Centimeters**

(Kilometers or Meters or Centimeters or Millimeters)

ⓙ Class length: **Meters**

(Kilometers or Meters or Centimeters or Millimeters)

ⓚ Window width: **Meters**

(Kilometers or Meters or Centimeters or Millimeters)

2 Complete each of the following tables: Answer by yourself.

a

Kilometer	Meter
8	8,000
12	12,000
250	250,000
2	2,000
30	30,000
650	650,000
90	90,000
600	600,000
100	100,000

b

Meter	Centimeter
2	200
15	1,500
258	25,800
8	800
20	2,000
100	10,000
20	2,000
42	4,200
1,000	100,000

c

Meter	Decimeter
4	40
20	200
12	120
6	60
20	200
15	150
100	1,000
1,000	10,000
450	4,500

3 Complete the following bar models to convert between lengths units:

a

525 cm	
5 m	25 cm

b

2,038 cm	
20 m	38 cm

c

3,005 cm	
30 m	5 cm

d

8,550 m	
8 km	550 m

e

10,035 m	
10 km	35 m

f

20,007 m	
20 km	7 m

g

574 cm	
5 m	74 cm

h

7,050 cm	
70 m	50 cm

i

60,250 cm	
602 m	50 cm

j

1,258 m	
1 km	258 m

k

20,240 m	
20 km	240 m

l

65,005 m	
65 km	5 m

m

405 cm	
40 dm	5 cm

n

825 mm	
82 cm	5 mm

o

220 cm	
2 m	2 dm

4 Complete the following:

a) 7 **m**, 45 **cm** = ...745...... **cm**

b) 9 **m**, 2 **cm** = ...902...... **cm**

c) 20 **m**, 8 **cm** = ...2,008...... **cm**

d) 50 **m**, 90 **cm** = ...5,090...... **cm**

e) 8 **km**, 750 **m** = ...8,750...... **m**

f) 80 **km**, 60 **m** = ...80,060...... **m**

g) 40 **km**, 7 **m** = ...40,007...... **m**

h) 5 **m**, 5 **dm** = ...55...... **dm**

i) 6 **cm**, 7 **mm** = ...67...... **mm**

j) 8 **dm**, 4 **cm** = ...84...... **cm**

k) 860 **cm** = ...8...... **m**, ...60...... **cm**

l) 504 **cm** = ...5...... **m**, ...4...... **cm**

m) 5,065 **cm** = ...50...... **m**, ...65...... **cm**

n) 21,050 **cm** = ...210...... **m**, ...50...... **cm**

o) 2,745 **m** = ...2...... **km**, ...745...... **m**

p) 71,025 **m** = ...71...... **km**, ...25...... **m**

q) 12,500 **m** = ...12...... **km**, ...500...... **m**

r) 725 **dm** = ...72...... **m**, ...5...... **dm**

s) 108 **mm** = ...10...... **cm**, ...8...... **mm**

t) 155 **cm** = ...15...... **dm**, ...5...... **cm**

5 Choose the correct answer:

a) The best unit for measuring the **length** of an eraser is Centimeters..... .

(millimeters or centimeters or meters or kilometers)

b) 70 **m** = ...7,000...... **cm** (7 or 700 or 7,000 or 7,000)

c) 8,000 **m** = ...8...... **km** (8 or 80 or 800 or 8,000)

d) 50 **km** + 20 **m** = ...50,020... **m** (520 or 5,020 or 520,000 or [50,020])

e) 50 **m** + 5 **dm** = ...5,050... **cm** (55 or 505 or [5,050] or 550)

f) 30,000 **dm** = ...3,000... **m** ([3,000] or 300 or 30 or 3)

g) 6,000 **cm** ...<... 600 **m** ([<] or = or > or ≥)

h) 5,000 **m** ...<... 50 **km** ([<] or = or > or ≥)

i) 2 **m** + 25 **cm** ...=... 22 **dm** + 5 **cm** (< or [=] or > or ≥)

6 **When the scientists poured cement in the ant colony and dug inside it, they found that the colony was 8 m deep. How many centimeters is the depth of the ant colony?**

8 m = 8 x 100 = 800 cm

7 **Ants in a colony transported soil while building their house, and this was done in milliards of trips. Each ant carried a portion of the soil to a kilometer to the surface. If each ant could move 10 loads of soil in a week, how much is this in kilometers, meters, and centimeters?**

...10... km = ...10,000... m = ...1,000,000... cm.

8 **The height of a school building is 25 m. What is the height of the building in decimeters, centimeters and millimeters?**

25 m = ...250... decimeters = ...2,500... centimeters = ...25,000... millimeters.

9 **If one black ant can walk 250 meters in one hour. How many hours will it take to walk 1 kilometer?**

250 + 250 + 250 + 250 = 1,000 m = 1 km

Number of hours = 4 hours

Assessment 1 on Lesson 1

Unit 3

1 Choose the correct answer:

ⓐ The best unit for measuring the **length** of a school bus is ......**Meters**...... .
(meters or centimeters or kilometers or grams)

ⓑ **A kilogram** is a measurement unit of the ......**mass**...... .
(volume or height or mass or capacity)

ⓒ 250 million, 50 thousand and 5 = ...**250,050,005**... . **(In standard form)**
(5,002,150 or 250,055,000 or 250,500,005 or 250,050,005)

ⓓ 200,000 cm = ...**2 km**...... (2 km or 20 m or 200 dm or 200 mm)

ⓔ 100 + 43 = ...**43**...... + 100 (143 or 47 or 50 or 43)

2 Complete the following:

ⓐ 40 km, 25 m = ...**40,000**...... m + ...**25**...... m = ...**40,025**...... m

ⓑ 9,570 cm = ...**95**...... m + ...**70**...... cm

ⓒ A **liter** is a measurement unit of ...**Capacity**... .

ⓓ The place value of the digit 8 in 8,417,216,234 is ..**Milliards**.. .

ⓔ 54,625 ≈ ......**54,600**...... *(To the nearest 100)*

3 Complete using (< , = or >):

ⓐ 4,589,465 **<** 4,958,456 ⓑ 4,500 cm **<** 450 m

ⓒ 50,025 m **>** 5 km, 25 m ⓓ 56 + 30 **>** 54 + 28

ⓔ (5 X 100,000,000) + (2 X 100) + (7 X 1) **=** 500,000,000+ 200 + 7

4 Arrange the following numbers in an ascending order:

25 m , 1,500 cm , 2 km , 2,000 dm

....**1,500 cm**.... , ...**25 m**.... , ...**2,000 dm**.... , ...**2 km**....

5 The distance between Samah's house and her school is 2 km. What is the distance in meters, decimeters, and centimeters?

2 km = ...**2,000**...... m = ...**20,000**...... dm = ...**200,000**...... cm

Lesson 2 Measuring Mass

1 **Choose the best unit for measuring the mass of each of the following (grams or kilograms):**

a A book (....Grams....)
b A pen (....Grams....)
c A rabbit (....Kilograms....)
d A car (....Kilograms....)
e A ring (....Grams....)
f A chair (....Kilograms....)

2 **Complete each of the following tables:**

a

Kilogram	Gram
5	...5,000...
70	...70,000...
200	...200,000...
...8...	8,000
...12...	12,000
...258...	258,000

b

Gram	Kilogram
9,000	...9...
30,000	...30...
500,000	...500...
...7,000...	7
...34,000...	34
...126,000...	126

3 **Complete the bar models to convert between mass units:**

a

5,200..... gram	
5 kg	200 g

b

8,007..... gram	
8 kg	7 g

c

15,015..... gram	
15 kg	15 g

d

20,200..... gram	
20 kg	200 g

e

3,250 gram	
...3... kg	...250... g

f

60,024 gram	
...60... kg	...24... g

g

200,060 gram	
...200... kg	...60... g

h

10,006 gram	
...10... kg	...6... g

4 Complete the following:

a) 4 kilograms = 4,000 grams
b) 20 kilograms = 20,000 grams
c) 300 kilograms = 300,000 grams
d) 680 kilograms = 680,000 grams
e) 3,000 grams = 3 kilograms
f) 90,000 grams = 90 kilograms
g) 600,000 grams = 600 kilograms
h) 905,000 grams = 905 kilograms
i) 3,250 g = 3 kg, 250 g
j) 24,120 g = 24 kg, 120 g
k) 30,020 g = 30 kg, 20 g
l) 300,008 g = 300 kg, 8 g
m) 3 kg, 245 g = 3,245 g
n) 15 kg, 20 g = 15,020 g
o) 12 kg, 150 g = 12,150 g
p) 20 kg, 100 g = 20,100 g

5 Choose the correct answer:

a) A/An **Gram** is a unit of mass measurement. (gram or meter or liter or hour)
b) A **gram** is the best unit for measuring the mass of a ring . (ring or child or car or chair)
c) 40 kilograms = 40,000 grams (40 or 400 or 4,000 or 40,000)
d) 200 kilograms = 200,000 grams (200,000 or 20,000 or 2,000 or 20)
e) 60,000 grams = 60 kg (6 or 60 or 600 or 6,000)
f) 3,000 grams = 3 kg (3 or 30 or 300 or 3,000)
g) 20 kg, 50 g = 20,050 grams (250 or 250,000 or 2,050 or 20,050)
h) 10 kg, 300 g = 10,300 grams (130 or 10,300 or 1,300 or 103,000)

6 Hassan has a cow that weighs 125 kilograms and 350 grams. Rewrite the weight in grams.

125,350 grams.

7 The total weight of all ants on Earth equals the total weight of all humans. One ant colony weighs 3,493 grams. Rewrite this number using kilograms and grams.

3 kilograms , 493 grams

8 Ahmed bought 5 kilograms and 200 grams of oranges, and Adam bought 8 kilograms of oranges. Rewrite these weights in grams and then find the sum of the weight of what Ahmed and Adam bought.

5,200 + 8,000 = 13,200 grams

Assessment 2 on Lesson 2

Unit 3

1 Choose the correct answer:

ⓐ A ....**Kilogram**.... is a unit of **mass** measurement.
(minute or kiloliter or kilometer or kilogram)

ⓑ A **kilogram** is the best unit for measuring the mass of a ....**desk**.... .
(ruler or balloon or pencil or desk)

ⓒ 50,000 grams = ...**50**.... kg (5 or 50 or 500 or 5,000)

ⓓ 30 kg + 125 g = ...**30,125**.... g (3,125 or 31,250 or 30,125 or 3,025)

ⓔ The value of the digit 5 in the **Ten Thousands** place is ....**50,000**.... .
(500,000 or 50,000 or 5,000 or 500)

2 Complete the following:

ⓐ The **largest** 7-digit number is ....**9,999,999**.... .

ⓑ 5,000 + 0 + 0 + 0 + 4 = ...**5,004**.... .

ⓒ 56,240 grams = ...**56**.... kg, ...**240**.... g

ⓓ 310,205 **(In expanded notation)** = ...
....**(3 x 100,000) + (1 x 10,000) + (2 x 100) + (5 x 1)**.... .

ⓔ The number that comes just **after** 999,999 is ....**1,000,000**.... .

3 Complete using (< , = or >):

ⓐ 20 kg **>** 2,000 g

ⓑ The mass of a rabbit **<** the mass of a car

ⓒ 7,306,820 **<** 7,368,200 ⓓ 2,500 dm **=** 250 m

ⓔ 3,000,050,003 **=** 3 milliards, 50 thousand, 3

4 Ahmed bought 4 kilograms and 300 grams of oranges, 3 kilograms of apples and 900 grams of strawberries. Rewrite these weights in grams and then find the sum of the weights of what Ahmed bought.

....**4,300 + 3,000 + 900 = 8,200 grams**.... .

Theme 1

Lesson 3 Units of Capacity

1 Choose the best unit for measuring the capacity of each of the following (liters or milliliters):

a) A water cup (Milliliter)

b) A swimming pool (Liter)

c) A spoon filled with medicine (Milliliter)

d) A car's fuel tank (Liter)

e) A family juice box (Liter)

f) A perfume bottle (Milliliter)

2 Complete each of the following tables: Answer by yourself.

a)

Liter	Milliliter
5	5,000
70	70,000
800	800,000
3	3,000
35	35,000
143	143,000

b)

Milliliter	Liter
2,000	2
60,000	60
900,000	900
7,000	7
15,000	15
221,000	221

3 Complete the bar models to convert between the following capacity units:

a)

3,450 mL	
3 L	450 mL

b)

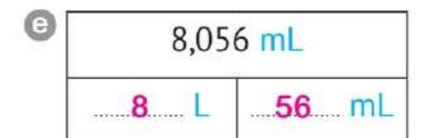
4,070 mL	
4 L	70 mL

c)

20,008 mL	
20 L	8 mL

d)

12,500 mL	
12 L	500 mL

e


8,056 mL	
8 L	56 mL

f

31,500 mL	
31 L	500 mL

g

40,003 mL	
40 L	3 mL

h

6,070 mL	
6 L	70 mL

4 Complete the following:

a 3 liters = 3,000 milliliters

b 50 liters = 50,000 milliliters

c 16 liters = 16,000 milliliters

d 20 liters = 20,000 milliliters

e 7,000 milliliters = 7 liters

f 80,000 milliliters = 80 liters

g 15,000 milliliters = 15 liters

h 200,000 milliliters = 200 liters

i 8,020 milliliters = 8 liters, 20 milliliters

j 20,050 milliliters = 20 liters, 50 milliliters

k 100,009 milliliters = 100 liters, 9 milliliters

l 10,016 milliliters = 10 liters, 16 milliliters

m 3 liters, 500 milliliters = 3,500 milliliters

n 20 liters, 40 milliliters = 20,040 milliliters

o 12 liters, 9 milliliters = 12,009 milliliters

5 Choose the correct answer:

a A Milliliter is the best unit for measuring the **capacity** of a **cup of tea**.

(gram or milliliter or liter or centimeter)

b A **liter** is a measurement unit of the capacity .

(weight or capacity or mass or length)

c) 20 **liters** = 20,000 **milliliters** (200 or 2,000 or [20,000] or 200,000)

d) 100 **liters** = 100,000 **milliliters** (100 or 1,000 or 10,000 or [100,000])

e) 5,000 **milliliters** = 5 **liters** ([5] or 50 or 500 or 5,000)

f) 300,000 **milliliters** = 300 **liters** (3 or 30 or [300] or 3,000)

g) 45 **liters** + 45 **milliliters** = 45,045 **milliliters**

(4,545 or 45,450 or [45,045] or 495)

h) 60 **liters** + 6 **milliliters** = 60,006 **milliliters** (606 or [60,006] or 60,060 or 66)

6 **The fish tank can be filled with 50 liters of water. If the tank contains 35 liters and 130 milliliters,** how much water do we need to fill the tank?

50 liters = 50,000 milliliters

35 liters, 130 milliliters = 35,130 milliliters

– Amount of water needed = 50,000 – 35,130 = 14,870 milliliters .

7 **Essam has 4 liters and 250 milliliters of sunflower oil, and he also has one liter and 50 milliliters of corn oil.**

– How much oil does Essam have?

4 liters, 250 milliliters = 4,250 milliliters

1 Liter, 50 milliliters = 1,050 milliliters

– Amount of oil = 4,250 + 1,050 = 5,300 milliliters .

8 **A water tank contains 500 liters of water. A family used 125 liters and 500 milliliters on one day and used 250 liters and 600 milliliters the other day. How much water is left in the tank?**

– Use the following **bar model** to solve:

500 liters = 500,000 milliliters		
125 L , 500 mL = 125,500 mL	250 L , 600 mL = 250,600 mL	123,900 mL

– Amount of water left = 500,000 – (250,600 + 125,500) = 500,000 – 376,100 = 123,900 milliliters .

Assessment 3 on Lesson 3

Unit 3

1 Choose the correct answer:

ⓐ A milliard is the **smallest** number formed from ...10... digits.
(7 or 9 or 10 or 11)

ⓑ 50 liters = ...50,000... milliliters (500 or 5,000 or 50,000 or 500,000)

ⓒ 14 liters, 14 milliliters = ...14,014... milliliters
(1,414 or 14,140 or 14,014 or 28)

ⓓ 50,000 milliliters > 5 liters (< or = or > or ≥)

ⓔ The number 75,499 is rounded to the nearest **1,000** ≈ ...75,000... .
(75,500 or 76,000 or 75,000 or 74,000)

2 Complete the following:

ⓐ 80,000,000 + 8,000,000 + 8,000 + 8 = ...88,008,008 **(In standard form)**

ⓑ 20,250 milliliters = ...20... liters, ...250... milliliters

ⓒ 2,050 millimeters = ...205... centimeters, ...0... millimeters

ⓓ If $\chi - 45 = 15$, then χ = ...60... .

ⓔ 50 kg, 20 grams = ...50,020... grams

3 Find the result:

ⓐ 23,456 + 64,247 = ...87,703...

ⓑ 65,754 – 37,244 = ...28,510...

ⓒ 45,565 + 54,435 = ...100,000...

ⓓ 80,000 – 24,000 = ...56,000...

4 Arrange the following numbers in a descending order:

500,500 , 5,500,000 , 500,005 , 5,050,000

...5,500,000... , ...5,050,000... , ...500,500... , ...500,005...

5 A juice bottle contains two liters of juice. Adel drank 660 milliliters of it. How much juice is left in the bottle?

...2,000 – 660 = 1,340 milliliters... .

Assessment on Concept 1

1 **Choose the correct answer:**

ⓐ A water tank contains **12** liters of water, so the number of milliliters that the tank contains is ....12,000........ mL.

(120 or 1,200 or 12,000 or 12)

ⓑ A/An ....Kilogram........ is the unit of measuring mass.

(liter or kilogram or hour or meter)

ⓒ **6** meters and **20** centimeters = ...620........ centimeters

(620 or 206 or 602 or 62)

2 **Complete the following:**

ⓐ **7,000** g = ...7........ kg

ⓑ **3** m + **30** cm = ...330........ cm

ⓒ **5,492** mL = ...5........ L, ...492........ mL

3 **Answer the following:**

ⓐ An ant walked **8** meters from the ant colony to search for food.

What is the distance traveled in centimeters?

........8 m = 800 cm........

....

ⓑ **One hundred** ants drink one liter of water.

How many milliliters do the ants drink?

........1 liter = 1000 mL........

....

Concept 3.2 Measuring Time

Lessons 4&5 Units of Measuring Time / Elapsed Time

1 Write the time shown on the digital clock and draw the hands of the analog clock:

a

02:45

It's quarter to 3

b

It's 10 past 3

c

04:00

It's 4 o'clock

d

It's quarter past 7

e

01:05

It's 5 past 1

f

It's 25 to 11

g

08:45

It's quarter to 9

h

It's 5 to 12

2 Represent the time shown on the digital clock and the analog clock:

a

9 : 20

It's 20 past 9.

b

8 : 25

It's 25 past 8.

c

5 : 45

It's quarter to 6.

d

2 : 55

It's 5 to 3.

e

1 : 30

It's half past 1.

f

7 : 50

It's 10 to 8.

3 Write the time shown on the analog clock, then write it on the digital clock:

a

1 : 15

It's quarter past 1

b

10 : 30

It's half past 10

c

7 : 55

It's 5 to 8

d

3 : 25

It's 25 past 3

e

4 : 40

It's 20 to 5

f

4 : 30

It's half past 4

4 Complete the following tables:

ⓐ X 7

Week	Day
1	7
2	14
3	21
4	28
5	35
6	42
7	49
8	56
9	63
10	70

ⓑ X 24

Day	Hour
1	24
2	48
3	72
4	96
5	120
6	144
7	168
8	192
9	216
10	240

ⓒ X 60

Hour	Minute
1	60
2	120
3	180
4	240
5	300
6	360
7	420
8	480
9	540
10	600

ⓓ X 60

Minute	Second
1	60
2	120
3	180
4	240
5	300
6	360
7	420
8	480
9	540
10	600

5 Solve the following conversion problems, using the previous tables:

ⓐ One **week** and three **days** = ...7.... **days** + ...3.... **days** = ...10.... **days**

ⓑ 4 **weeks** and 5 **days** = ...28.... **days** + ...5.... **days** = ...33.... **days**

ⓒ 2 **weeks** and 6 **days** = ...14.... **days** + ...6.... **days** = ...20.... **days**

ⓓ 1 **day** and 8 **hours** = ...24.... **hours** + ...8.... **hours** = ...32.... **hours**

ⓔ 2 **days** and 20 **hours** = ...48.... **hours** + ...20.... **hours** = ...68.... **hours**

ⓕ 3 **days** and 10 **hours**= ....72.... **hours** + ...10.... **hours** = ...82.... **hours**

ⓖ 3 **hours** and 40 **minutes** = 180 **minutes** + 40 **minutes** = 220 **minutes**

h) 2 **hours** and 10 **minutes** = 120 **minutes** + 10 **minutes** = 130 **minutes**

i) 1 **hour** and 25 **minutes** = 60 + 25 = 85 **minutes**

j) 3 **minutes** and 50 **seconds** = 180 **seconds** + 50 **seconds** = 230 **seconds**

k) 10 **minutes** and 15 **seconds** = 600 **seconds** + 15 **seconds** = 615 **seconds**

l) 2 **minutes** and 3 **seconds** = 120 **seconds** + 3 **seconds** = 123 **seconds**

6 Solve the following conversion problems, using the previous tables:

a) 25 **days** = 3 **weeks** and 4 **days**

b) 36 **days** = 5 **weeks** and 1 **days**

c) 48 **days** = 6 **weeks** and 6 **days**

d) 29 **hours** = 1 **days** and 5 **hours**

e) 60 **hours** = 2 **days** and 12 **hours**

f) 250 **hours** = 10 **days** and 10 **hours**

g) 95 **minutes** = 1 **hours** and 35 **minutes**

h) 200 **minutes** = 3 **hours** and 20 **minutes**

i) 560 **minutes** = 9 **hours** and 20 **minutes**

j) 65 **seconds** = 1 **minutes** and 5 **seconds**

k) 195 **seconds** = 3 **minutes** and 15 **seconds**

l) 380 **seconds** = 6 **minutes** and 20 **seconds**

7 Find the result of each of the following:

a)

	Hours		Minutes
	7	:	36
+	3	:	15
	10	:	51

b)

	Hours		Minutes
	2	:	27
+	5	:	24
	7	:	51

c)

	Hours		Minutes
	6	:	39
+	2	:	50
	9	:	29

d)

	Hours		Minutes
	4	:	35
+	4	:	45
	9	:	20

e) Hours Minutes
5 : 47
+ 2 : 30
8 : 17

f) Hours Minutes
2 : 38
+ 6 : 36
9 : 14

g) Hours Minutes
6 : 49
− 4 : 39
2 : 10

h) Hours Minutes
10 : 50
− 6 : 46
4 : 04

i) Hours Minutes
7 : 20
− 6 : 30
00 : 50

j) Hours Minutes
4 : 00
− 1 : 15
2 : 45

k) Hours Minutes
4 : 05
− 1 : 40
2 : 25

l) Hours Minutes
11 : 15
− 00 : 50
10 : 25

m) 6 : 27 + 3 : 24 = 9 : 51

n) 8 : 24 + 1 : 36 = 10 : 00

o) 2 : 25 + 4 : 45 = 7 : 10

p) 9 : 05 − 3 : 48 = 5 : 17

q) 6 : 45 − 4 : 35 = 2 : 10

r) 8 : 10 − 7 : 40 = 00 : 30

8 Amir's family used their computer for 3 hours on Saturday, 3 hours on Sunday, and 5 hours on Monday. How many minutes have they spent on the computer?

11 hours = 660 minutes

9 It takes Dahlia 2 hours and 15 minutes to drive to her grandmother's house. How many minutes does she take to drive there?

120 + 15 = 135 minutes

10 Farah was training for the marathon. Her goal was to run for 1 hour and 30 minutes. If she starts running at 8:35 a.m., when will she finish running?

8:35 + 1:30 = 10:05

11 The worker ants went out to find food for the colony. The workers left at 6:30 a.m. and returned at 7:42 a.m. How long did the worker ants take to search for food?

7:42 – 6:30 = 1:12

One hour and 12 minutes

Assessment 4 on Lessons 4&5

Unit 3

1 **Choose the correct answer:**

a (4 + 5) + 7 = 4 + (5 + 7) (Associative Property)

(Associative or Identity Element or Commutative)

b (6 X 10,000,000) + (6 X 100) ...>... 6,600,000 (< or = or >)

c 2 days and 2 hours = ...50... hours (26 or 122 or 50 or 860)

d Ten million is the smallest number formed from ...8... digits.

(6 or 7 or 8 or 9)

e 20 km = ...20,000... meters (2 or 200 or 2,000 or 20,000)

2 **Complete the following:**

a 3:45 + 2:15 = ...5... : ...60... = ...6:00...

b 10 minutes and 10 seconds = ...610... seconds

c The value of the digit 5 in the **Ten Thousands** place = ...50,000... .

d 325,215 + 125,247 = ...450,462...

e 39 days = ...5... weeks, ...4... days

3 **Draw the hands of the analog clock to represent the time shown:**

a It's 10 past 4.

b It's 10 to 8.

c It's half past 2.

4 **Salma trains to swim for an hour and 15 minutes.**

If she starts training at 5:35, when will Salma finish training?

5:35 + 1:15 = 6:50

Lessons 6&7 Applications of Measurements 1.2

1 In the colony, the ants collect 950 grams of food. If the ants consumed 25 grams of food on Monday, and 37 grams of food on Tuesday, how many grams of food are left?

950 – (25 + 37) = 888 g

2 Taher's height increased by 10 centimeters in one year. He is now 1 meter and 6 centimeters long.
How tall was Taher in centimeters one year ago?

106 – 10 = 96 cm

3 An ant from a colony walked two kilometers in one day.
An ant from another colony walked 3,000 meters in one day.
What is the difference in distance in kilometers?

3,000 – 2,000 = 1,000 m = 1 km

4 Ali's cat weighs 7 kg and his dog weighs 17 kg. When Ali took them to the vet, he learned that his cat had gained 450 grams and his dog had gained 120 grams.
What is the total weight of the two pets now?

7,450 + 17,120 = 24,570 g

5 Professor Emad bought four two-liter bottles of soda for a picnic for the Fourth Primary grade.

If at the end of the party there were 2 liters and 829 milliliters of soda left, how many milliliters of soda did the students drink?

8,000 – 2,829 = 5,171 mL

6 The worker ant takes short naps to replenish its energy for up to 250 minutes a day and the queen ant can sleep for up to 9 hours a day.

Which ant sleeps longer and what is the difference between them?

540 – 250 = 290 min

7 Rania measures the length of two rows of ants. The row of ants in the first colony is 30 centimeters long.

The length of the row of ants in the second colony is 500 mm.

How long are the two rows of ants together in centimeters?

300 + 500 = 800 mm = 80 cm

8 Dahlia's dog weighs 15 kilograms. When she took him to the vet, she knew that he gained 2,000 grams.

How many grams does Dahlia's dog need to weigh 20 kilograms?

20,000 – 17,000 = 3,000 g

9 Ms. Basma bought two cartons of milk, each of which weighs two liters.
Her three children drank 1,200 milliliters on Monday, and 950 milliliters on Tuesday. How many milliliters of milk are left?

4,000 – (1,200 + 950) = 1,850 mL

10 Ziad played video games from 3:45 p.m. to 5:10 p.m., He is only allowed to play video games for 80 minutes. Did he break the rule? If the answer is no, why? If yes, how many extra minutes did he play?

5:10 – 3:45 = 1:25 = 85 min, Yes, he broke the rule

85 – 80 = 5 min

11 Ahmed has a 12 meter long piece of wood. He wants to cut it into 3 equal lengths. How long should each piece be in meters? What is the length of each piece in centimeters?

12 ÷ 3 = 4 m = 400 cm

12 Amany likes swimming. She spends half an hour every day swimming. How many minutes does she spend swimming in 5 days?

30 x 5 = 150 min

13 Sarah walked 5,000 meters every day for 9 days.
What is the total number of kilometers she walked?

5,000 x 9 = 45,000 m = 45 km

14 Mary was on a picnic with her family and she counted 10 ants walking together. If each ant weighs 1 gram and carries a weight 50 times its body weight, what is the total weight carried by the ant?

10 x 50 = 500 g

15 Ants walk about 5,000 meters every day.
How many kilometers do ants walk in 6 days?

5,000 X 6 = 30,000 m = 30 km

16 Samira is studying for the next Math test. If Samira studies for 30 minutes a day, how many hours will she spend studying in 8 days?

8 x 30 = 240 min = 4 hours

17 In a colony of ants, ants eat approximately 2,000 grams of food every day. If the ants have 10 kg of food stored, how many days do the ants need to consume this amount of food?

10,000 ÷ 2,000 = 5 days

18 An ant can walk up to 5 km per day. If an ant keeps walking for 20 days, what is the distance it will walk in meters?

5 x 20 = 100 km = 100,000 m

Assessment 5 on Lessons 6&7

Unit 3

1 Choose the correct answer:

ⓐ Twenty million, two thousand ...... < ...... 22,000,000 (< or = or >)

ⓑ The digit in the **Millions** place in 201,600,000 is ...1... . (6 or 1 or 2 or 4)

ⓒ 6 hours = ...360... minutes (180 or 360 or 144 or 42)

ⓓ 2,000 millions = ...2,000,000... thousands
(2,000,000,000 or 2,000,000 or 2,000 or 2)

ⓔ Three million, thirty thousand, three hundred = ...3,030,300... .
(In standard form) (3,030,300 or 3,300,300 or 3,003,300 or 300,003,030)

ⓕ 8 + 12 = 12 + 8 (...Commutative... *Property)*
(Commutative or Associative or Neutral Element or Subtraction)

2 Complete the following:

ⓐ 3 days and 3 hours = ...75... hours

ⓑ 195 minutes = ...3... hours, ...15... minutes

ⓒ (6 X 100,000,000) + (7 X 100,000) + (6 X 1,000) + (7 X 100) + (6 X 1)
= 600,706,706 **(In standard form)**

ⓓ 5:12 – 3:50 = ...1... : ...22... .

ⓔ The value of the digit 6 in the Ten Millions place is ...60,000,000... .

3 Match:

ⓐ 2 days , 12 hours	60 days	1
ⓑ 8 weeks , 4 days	60 minutes	2
ⓒ 1 minute	60 hours	3
ⓓ 1 hour	60 seconds	4

(Answer lines: ⓐ → 3, ⓑ → 1, ⓒ → 4, ⓓ → 2)

4 Arrange the following numbers in an ascending order:

5,005,500 , 5,500,005 , 5,050,050 , 5,005,050

...5,005,050... , ...5,005,500... , ...5,050,050... , ...5,500,005...

Assessment on Concept 2

Unit 3

1 **Choose the correct answer:**

ⓐ 7:25 − 3:15 = ...4:10.... (7:00 or 4:40 or 4:10 or 10:40)

ⓑ The time shown on the opposite clock is ....3:05.... .

(3:15 or 4:00 or 1:03 or 3:05)

ⓒ **2** hours and **10** minutes = ...130.... minutes

(210 or 130 or 120 or 12)

2 **Complete:**

ⓐ **5** weeks and **3** days = ...38.... days

ⓑ 140 minutes = ...2.... hours + ...20.... minutes

ⓒ 2:45 **+** 6:17 = ...9:02....

3 **Ahmed's cat weighs 3 kilograms and 400 grams, and Hisham's dog weighs 9 kilograms and 700 grams.**

What is the sum of the weights of the two pets.

3,400 + 9,700 = 13,100 gram

4 **The height of the school building is 20 meters and 40 cm, and the tree adjacent to the school is 9 meters and 80 cm high.**

How much is the height of the school building greater than the height of the tree?

2,040 – 980 = 1,060 cm

Unit 4 Area and Perimeter

Concept 4.1 Explore Area and Perimeter

Lesson 1 Finding Perimeter

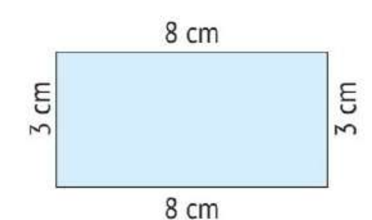
1 Find the perimeter of each of the following. Use two different formulas to solve each problem: (Show your steps)

ⓐ First Formula = ……………

$3 + 8 + 3 + 8 = 22$ cm

Second Formula = ……………

$2 \times (3 + 8) = 22$ cm

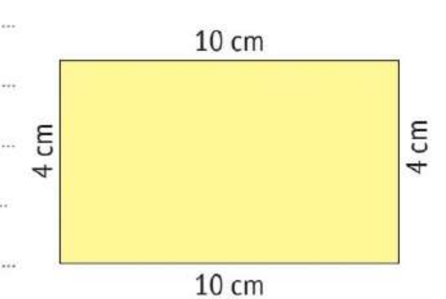


ⓑ First Formula = ……………

$2 \times 4 + 2 \times 10 = 28$ cm

Second Formula = ……………

$2 \times (4 + 10) = 28$ cm

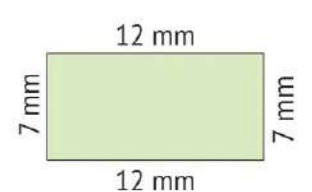


ⓒ First Formula = ……………

$2 \times 7 + 2 \times 12 = 38$ mm

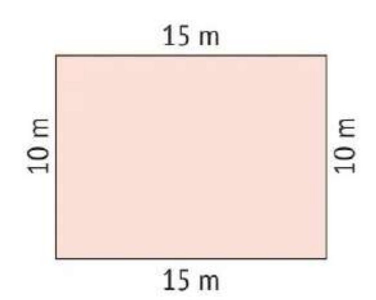
Second Formula = ……………

$2 \times (7 + 12) = 38$ mm



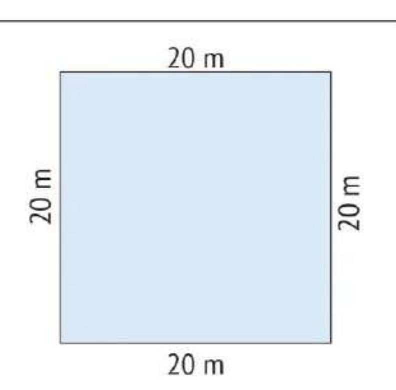
d First Formula = 2 X 15 + 2 X 10 = 50 m

Second Formula = 2 X (15 + 10) = 50 m



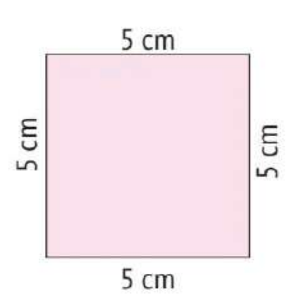
e First Formula = 20 X 4 = 80 m

Second Formula = 20 + 20 + 20 + 20 = 80 m



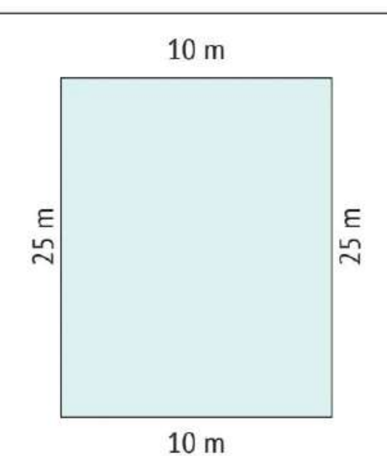
f First Formula = 5 X 4 = 20 cm

Second Formula = 5 + 5 + 5 + 5 = 20 cm



g First Formula = 25 + 10 + 25 + 10 = 70 m

Second Formula = 2 X (10 + 25) = 70 m

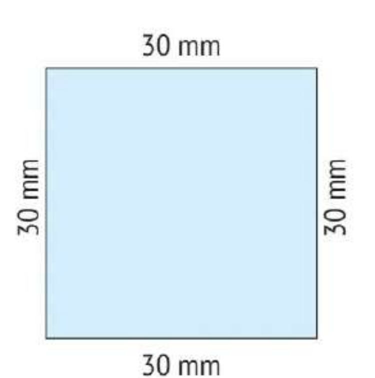


ⓗ First Formula = ...

4 X 30 = 120 mm

Second Formula = ...

30 + 30 + 30 + 30 = 120 mm



2 **Solve the following perimeter problems: For each problem, sketch a rectangle and record the length and width according to the problem:**

ⓐ A window is in the shape of a rectangle, with a **60** cm length and a **40** cm width. Find the perimeter of the window.

P = 2 X (60 + 40) = 200 cm

ⓑ A square table has a side length of **2** m.
What is the perimeter of the table?

P = 2 X 4 = 8 m

c Kamal owns a rectangular farm. It is **20** meters long and **8** meters wide. What is the perimeter of this farm?

P = 2 X (20 + 8) = 56 m

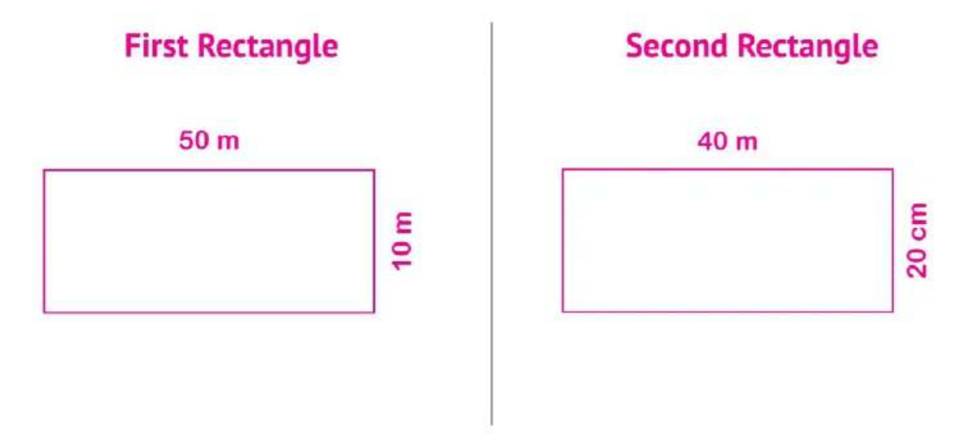
d A square picture has a side length of **30** cm. What is the perimeter of the frame for this picture?

P = 4 X 30 = 120 cm

e The football team wants to surround part of the field with ropes to play football. They need a space that is **105** meters long and **68** meters wide. What is the length of the rope they would need for this part of the field?

P = 2 X (105 + 68) = 346 m

3 Ahmed practiced walking around a playground. He walked a distance of 120 m.
Draw two different rectangles that can represent this path.
Write the length and width of the drawing.



4 Saleh owns a rectangular farm. The length of the fence surrounding the farm is 50 m.
Draw two different rectangles that can represent the shape of the farm. Write the length and width on the drawing.

First Rectangle

15 m

10 m

Second Rectangle

20 m

5 m

5 A square has a side length of 12 cm. Find its perimeter. Then draw a rectangle with the same perimeter.

P = 12 x 4 = 48 cm

14 cm

10 cm

6 A square has a side length of 28 cm. Find its perimeter. Then draw a rectangle with the same perimeter.

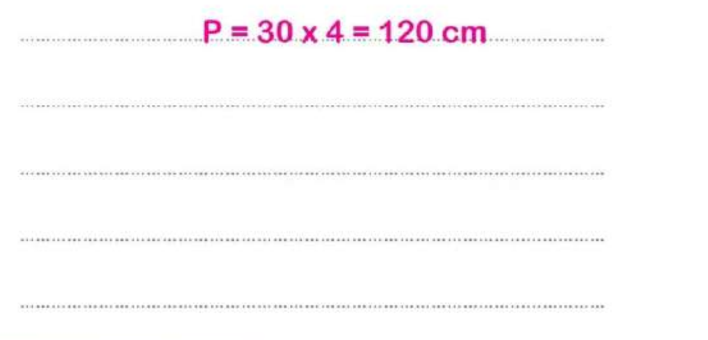
P = 28 x 4 = 112 cm

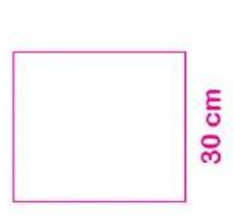
30 cm

26 cm

7 Sarah is drawing a line around a square cake. One side of the cake is 30 centimeters long.
How long is the line drawn by Sarah?

P = 30 x 4 = 120 cm





8 Complete the following:

ⓐ Perimeter of the **rectangle**: P = ...L.... + ...W.... + ...L.... + ...W.... .

ⓑ Perimeter of the **rectangle**: P = (....L.... + ...W....) X 2

ⓒ Perimeter of the **rectangle**: P = (....L.... X 2) + (....W.... X 2)

ⓓ Perimeter of the **square**: P = ...S.... X ....4.... .

ⓔ A rectangle has a length of 5 cm and a width of 3 cm, its perimeter is ....16 cm.... .

ⓕ A rectangle of 15 m length and 10 m width, its perimeter is ....50 m.... .

ⓖ A square with side length 6 cm, its perimeter is ....24 cm.... .

ⓗ A square with side length 20 mm, its perimeter is ....80 mm.... .

9 Choose the correct answer:

ⓐ Perimeter of the rectangle = P = (L + W) x 2 .

(P = L X W or P = L + (W X 2) or P = (L + W) X (L + W) or P = (L + W) X 2)

ⓑ Perimeter of the rectangle = P = (L x 2) + (W x 2)

(P = (L X 2) + (W X 2) or P = (L + 2) X (W + 2) or P = (L X W) X 2 or P = L + W)

ⓒ Perimeter of the rectangle = P = L + W + L + W

(P = L X W or P = L X W X L X W or P = L + W + L + W or P = L X W X 2)

ⓓ A rectangle has a length of 7 cm and a width of 5 cm. Its perimeter is ....24.... cm. (97 or 13 or 35 or 24)

ⓔ A rectangle has a length of 6 cm and a width of 8 cm, so its perimeter is ....28.... cm. (86 or 28 or 14 or 48)

ⓕ A square has a side length of 6 cm, its perimeter is ....24.... cm. (24 or 36 or 18 or 22)

ⓖ A square has a side length of 10 cm, its perimeter is ....40.... cm. (40 or 100 or 20 or 65)

Assessment 1 on Lesson 1

Unit 4

1 Choose the correct answer:

a) 2,500 centimeters = **25** meters (25 or 250 or 25,000 or 2,500)

b) Million is the **smallest** number formed from **7** digits (6 or 7 or 10 or 8)

c) A rectangle has a length of 7 cm and a width of 2 cm. Its perimeter is **18** . (14 or 16 or 18 or 28)

d) Three hundred million, thirty thousand **(In standard form)** = **300,030,000**. (300,030,000 or 300,300,000 or 300,003,000 or 3,300,003)

e) 198 + 214 = **214** + 198 (190 or 200 or 214 or 210)

2 Complete the following:

a) A square whose sides are 20 mm, then its perimeter is:
P= **80 mm** .

b) (4 X 10,000,000) + (2 X 10,000) + (3 X 10) = **40,020,030**

c) The place value of the digit 6 in 245,602,714 is **Hundred Thousands**

d) 45 + (55 + 19) = (**45** + 55) + **19** (**Associative** *Property*)

e) 45,000 milliliters = **45** liters

3 Find the result of each of the following:

a) 456,258 + 245,051 = **701,309**

b) 500,120 − 150,058 = **350,062**

c) 500,000,000 + 2,000,000 + 400 + 70 + 3 = **502,000,473**

d) 800,000,000 − 1 = **799,999,999**

4 Arrange the following numbers in a descending order:

450,000 , 500,400 , 400,500 , 540,000 , 405,000

540,000 , **500,400** , **450,000** , **405,000** , **400,500**

5 A painting is 5 meters in length and 2 meters in width. Find the perimeter of the necessary frame for this painting.

P = (2 + 5) x 2 = 7 x 2 = 14 m .

Lesson 2 Finding Area

1 Calculate the **area** of the following rectangles: (Show your steps)

ⓐ Area = $4 \times 6 = 24\ cm^2$

6 cm

4 cm

ⓑ Area = $4 \times 10 = 40\ cm^2$

ⓒ Area = $9 \times 6 = 54\ mm^2$

ⓓ Area = $10 \times 12 = 120\ m^2$

12 m

10 m

(e) Area = 20 X 20 = 400 m^2

20 m
20 m

(f) Area = 5 X 5 = 25 cm^2

5 cm
5 cm

(g) Area = 3 X 3 = 9 m^2

3 m
3 m

(h) Area = 9 X 9 = 81 cm^2

9 cm
9 cm

2 **There is a small ant farm in the form of a rectangle. Its dimensions are 20 centimeters and 8 centimeters. What is the area of this farm?**

Area = A = 8 x 20 = 160 cm^2

3 **Jannat is designing a work of art and she needs two pieces of paper. Each piece must be 6 meters long and 2 meters wide. The two pieces of paper will be glued together at the two short edges. When she's finished with the artwork, she must decide whether to frame it or hang it up and cover it with glass. Jannat needs to know the measurements of the frame and glass to make her decision.**

What is the frame size?

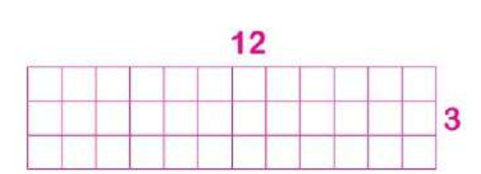
Do you have to calculate the area or the perimeter to find this measurement? $P = 6 + 6 + 2 + 6 + 6 + 2 = 28$ m

What is the glass size?

Do you have to calculate the area or the perimeter to find this measurement? $A = 12 \times 2 = 24$ m^2

4 **You have 36 squares of rugs to be arranged on the floor in a rectangular form. Draw two possible arrangements with the measurements of the length and width. What is the perimeter of each arrangement? What is the area of each arrangement?**

12

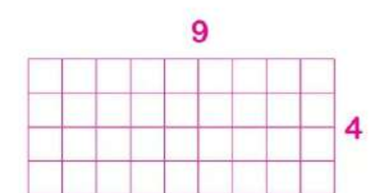


3

$P = 12 + 3 + 12 + 3 = 30$ units

$A = 12 \times 3 = 36$ square units

9

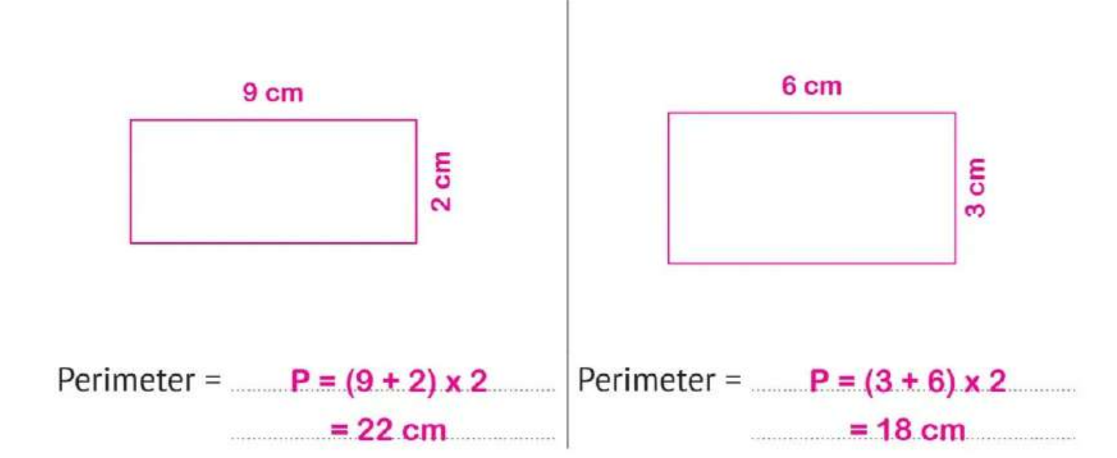


4

$P = 9 + 4 + 9 + 4 = 26$ units

$A = 9 \times 4 = 36$ square units

5 Draw two rectangles, each with an area of 18 cm^2, then find the perimeter of each of them:



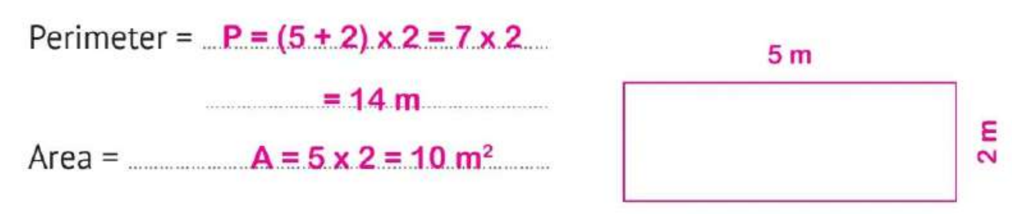
Perimeter = P = (9 + 2) x 2
= 22 cm

Perimeter = P = (3 + 6) x 2
= 18 cm

6 In a science project, two students are creating an ant farm enclosure, which is 5 meters long and two meters high. Draw the enclosure with the dimensions. Then find the perimeter and area.

Perimeter = P = (5 + 2) x 2 = 7 x 2
= 14 m

Area = A = 5 x 2 = 10 m^2



7 A rectangular bakery has an area of 30 square meters.
What is the perimeter of this bakery?
Draw the bakery and write the dimensions.

Perimeter = P = (6 + 5) x 2 = 11 x 2
= 22 m

6 m

5 m

8 **Draw a square with an area of 25 cm^2. Then find its perimeter. Write the dimensions on the drawing.**

5 cm / 5 cm / 5 cm / 5 cm

P = 5 x 4 = 20 cm .

9 **Complete the following:**

a) Area of the **rectangle**: A = L x W .

b) Area of the **square**: A = S x S .

c) A rectangle has a length of 9 cm and a width of 3 cm. Its perimeter is 24 cm, and its area is 27 cm^2.

d) A rectangular piece of land with a length of 20 meters and a width of 10 meters, then its area is 200 m^2.

e) In the opposite figure, there are two conjoined rectangles.

The sum of their areas:

3 cm, 7 cm, 3 cm

A = 3 x 3 = 9 cm^2.

A = 3 x 7 = 21 cm^2.

A = 9 + 21 = 30 cm^2.

10 **Choose the correct answer:**

a) Area of the **rectangle**: A = L x W .

(A = (L + W) X 2 or A = L + W or A = L – W or A = L X W)

b) Area of the **square**: A = S x S .

(A = S X 4 or A = S X 2 or A = S – S or A = S X S)

c) A square with sides of 7 mm, its surface area = 49 mm^2.

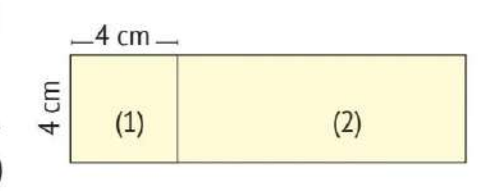
(14 or 49 or 28 or 36)

d) A rectangle has a length of 8 cm and a width of 4 cm. Its surface area is 32 cm^2.

(32 or 12 or 24 or 84)

e) The total area of the opposite figure is 40 cm^2. The area of rectangle (2) = 24 cm^2.

(56 or 24 or 16 or 40)



Assessment 2 on Lesson 2

Unit 4

1 Choose the correct answer:

a. A square with side length 8 cm, its area is ..... **64** ..... cm^2.
(88 or 32 or **64** or 16)

b. The **value** of the digit 7 in the **Ten Thousands** place = ... **70,000** ..... .
(70 or 700 or 7,000 or **70,000**)

c. 400 Millions + 40 Thousands + 4 = **400,040,004**
(4,004,400 or 400,400,400 or **400,040,004** or 4,000,404)

d. A rectangle has a length of 6 cm and a width of 3 cm. Its perimeter is ..... **18 cm** ..... .
(36 cm^2 or **18 cm** or 18 cm^2 or 9 cm^2)

e. 204,000 ... **>** ... 20,000 + 4,000
(< or = or **>**)

2 Complete the following:

a. A rectangle is 10 cm long and 5 cm wide, A = ... **50** ..... cm^2.

b. 45,218 ≈ ..... **50,000** ..... . **(Rounded the nearest 10,000)**

c. 50 ten millions = ... **500,000** ..... thousands.

d. A square has an area of 25 cm^2, the length of its side is ..... **5** ..... .

e. 100,000 meters = ... **100** ..... kilometers

3 Complete using (<, = or >):

a. 45,025,000 **>** 40,525,000

b. 4 X 100,000,000 **<** 4 X 1,000,000,000

c. 4,000 grams **<** 40,000 kilogram

d. 200 millions **>** 2,000,000

4 Calculate the perimeter and area of the corresponding figure:

4 cm | 8 cm
4 cm
(1) (2)

a. Area = ... **A = 16 + 32 = 48 cm^2** .....

b. Perimeter = **P = (4 + 12) x 2 = 16 x 2 = 32 cm**

5 In a company, a piece of glass is cut to cover the top of a dining table. The table is 8 meters by 6 meters. What is the area of the piece of glass needed for this table?

..... **A = 6 x 8 = 48 m^2** ..... .

Lesson 3 Unknown Dimensions

1 Complete the following table:

	Length of a Rectangle	Width of a Rectangle	Perimeter	Area
a	8 cm	5 cm	26 cm	40 cm^2
b	6 m	4 m	20 m	24 m^2
c	8 m	7 m	30 m	56 cm^2
d	15 mm	10 mm	50 mm	150 mm^2
e	20 mm	10 mm	60 mm	200 mm^2
f	7 cm	6 cm	26 cm	42 cm^2
g	9 cm	7 cm	32 cm	63 cm^2
h	6 dm	4 dm	20 dm	24 dm^2
i	8 dm	5 dm	26 dm	40 dm^2

2 Complete the following table:

	Side Length of a Square	Perimeter	Area
a	4 cm	16 cm	16 cm^2
b	7 cm	28 cm	49 cm^2
c	8 cm	32 m	64 cm^2
d	5 m	20 m	25 m^2
e	6 mm	24 mm	36 mm^2
f	9 mm	36 cm	81 mm^2

3 Some fire ants left the mound to go look for food. They went 8 meters east from the mound and then turned and walked 4 meters north. They found a big tree so they walked around it. When they passed the tree, they turned west for 3 more meters and then headed south 8 meters back home. See their path in the diagram. Label the missing measurements. How many meters in total did they walk? What is the area of the shape?

$8 + 8 + 4 + 5 + 4 + 3 = 32$ meters.

$A = 12 + 32 = 44\ m^2$

3 m
4 m
5 m
8 m
4 m
mound
8 m

4 Tahani wants to put a square frame around her father's picture. The area of the picture that she wants to frame is 100 square centimeters. What is the width and length of the frame? Draw the frame and show your steps.

$10 \times 10 = 100$

So, the side length = 10 cm.

10 m

10 cm

5 Soliman works on a farm. The fence around the goats fell off, so his uncle asked him for more wires to build a new fence. He told him that the fence is 25 meters wide and that he needed to get 110 meters of wire to encircle the entire space. What is the length of the unknown side? Draw the fence and find the unknown length.

$110 \div 2 = 55$ m

$55 - 25 = 30$ m

30 m

25 m

6 A rectangular mirror with an area of 1200 square centimeters. The mirror is 40 cm long. What's its width?

$W = 1200 \div 40 = 30$ cm

7 Sameh's book is 30 cm long. The cover of Sameh's book has a perimeter of 100 cm. What is Sameh's book width?

$100 \div 2 = 50$ cm

$W = 50 - 30 = 20$ cm

8 Choose the correct answer:

a) A rectangle has a perimeter of 60 cm and a length of 20 cm, then its width is ......10...... cm. (3 or [10] or 40 or 50)

b) A rectangle has an area of 30 cm^2 and a width of 5 cm. Its length is ......6...... cm. (35 or [6] or 9 or 25)

c) A square has a perimeter of 20 cm, the length of its side is ......5...... cm. ([5] or 4 or 10 or 7)

d) A square has an area of 36 cm^2, the length of its side is ......6...... cm. (5 or 9 or 4 or [6])

e) A square has a perimeter of 12 cm, then its area is ......9...... cm^2. (48 or [9] or 36 or 144)

f) A square has an area of 25 cm^2, its perimeter is ......20...... cm. (5 or [20] or 100 or 32)

9 Complete the following:

a) A rectangle has a perimeter of 40 cm and a length of 12 cm, then its width is ......8...... cm.

b) A rectangle has an area of 45 cm^2 and a width of 5 cm, so its length is ......9...... cm.

c) A rectangle has a perimeter of 28 cm and a length of 8 cm, then its area is ......48...... cm^2.

d) A rectangle has an area of 32 cm^2 and a width of 4 cm. Its perimeter is ......24...... cm.

e) A square has a perimeter of 16 cm, the length of its side is ......4...... cm.

f) A square has an area of 49 cm^2, the length of its side is ......7...... cm.

g) A square has a perimeter of 40 cm, then its area is ......100...... cm^2.

h) A square has an area of 36 cm^2, its perimeter is ......24...... cm.

Assessment 3 on Lesson 3

Unit 4

1 Choose the correct answer:

ⓐ A square has a perimeter of **12** cm, then its area is ...... **9** ...... cm^2.
(21 or 3 or 9 or 24)

ⓑ The **value** of the digit 9 in 45,952,102 is ...... **900,000** ....
(9,000,000 or 900,000 or 90,000 or 9,000)

ⓒ 5 + 0 = 5 **Additive Identity Element.** (...... *Property)*
(Distributive or Associative or Commutative or Additive Identity Element)

ⓓ 25,452 ≈ 30,000 *(Rounded to the nearest* ...... **10,000** ......*)*
(1,000 or 10,000 or 100,000 or 1,000,000)

ⓔ The best unit for measuring the **height** of a school is ...... **meters** ....
(kilometers or meters or centimeters or millimeters)

2 Complete the following:

ⓐ A rectangle has an area of **45** cm^2 and a width of **5** cm, then its perimeter is ...... **28** ....

ⓑ 5,065 cm = ... **50** ...... m, ... **65** ...... cm.

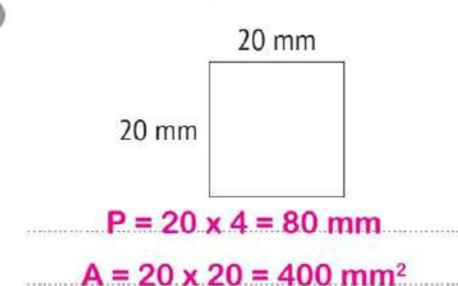
ⓒ 300,450 = (3 X ...... **100,000** ......) + (4 X ...... **100** ......) + (5 X ...... **10** ......)

ⓓ 245 + 218 = ... **218** ...... + 245 *(***Commutative** *Property)*

ⓔ If χ + 245 = 786, then χ = ... **541** ....

3 Calculate the **perimeter** and **area** of each of the following shapes:

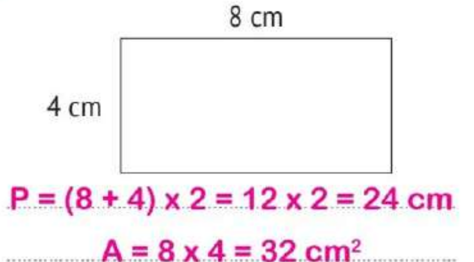
ⓐ



P = 20 x 4 = 80 mm

A = 20 x 20 = 400 mm^2

ⓑ



P = (8 + 4) x 2 = 12 x 2 = 24 cm

A = 8 x 4 = 32 cm^2

4 A city is in the shape of a rectangle. It is 4 kilometers wide and 8 kilometers long. What is the area of this city?

...... **A = 8 x 4 = 32 km^2** ....

Theme 1

Lesson 4 Complex Shapes

1 Divide each of the following shapes into rectangles or smaller squares and then calculate the perimeter and area of the corresponding figure:

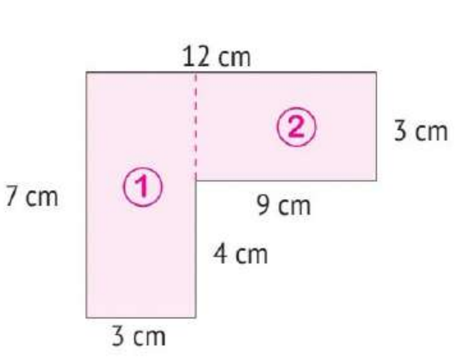
a P = 12 + 3 + 9 + 4 + 3 + 7

= 38 cm

$A = A_1 + A_2$

= 7 X 3 + 9 X 3

= 21 + 27 = 48 cm²



b P = 15 + 14 + 5 + 6 + 10 + 8

= 58 cm

$A = A_1 + A_2$

= 15 X 8 + 6 X 5

= 120 + 30 = 150 cm²

8 cm, 10 cm, 6 cm, 15 cm, 5 cm, 14 cm

c P = 20 + 12 + 4 + 4 + 16 + 8

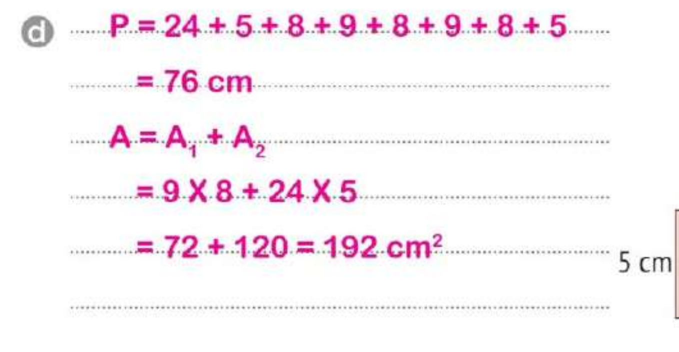
= 64 cm

$A = A_1 + A_2$

= 16 X 8 + 12 X 4

= 128 + 48 = 176 cm²

20 cm, 8 cm, 12 cm, 16 cm, 4 cm, 4 cm



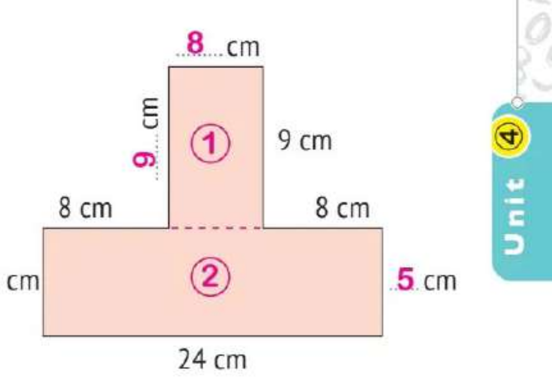
d $P = 24 + 5 + 8 + 9 + 8 + 9 + 8 + 5$

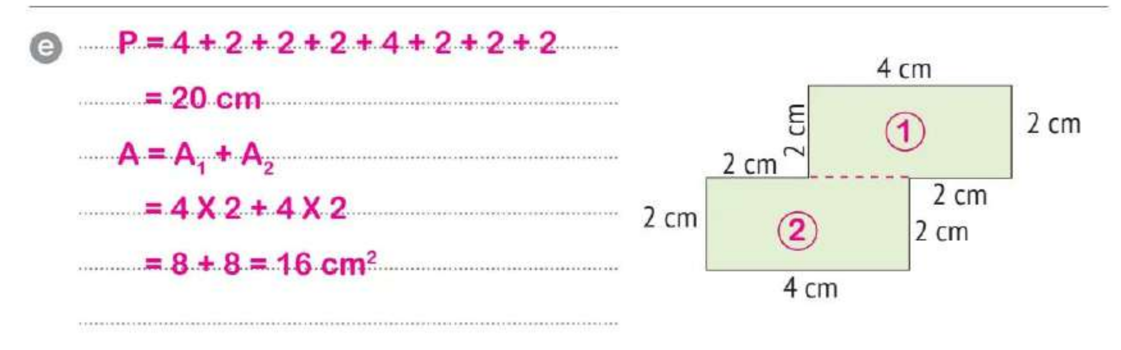
$= 76$ cm

$A = A_1 + A_2$

$= 9 \times 8 + 24 \times 5$

$= 72 + 120 = 192$ cm^2





e $P = 4 + 2 + 2 + 2 + 4 + 2 + 2 + 2$

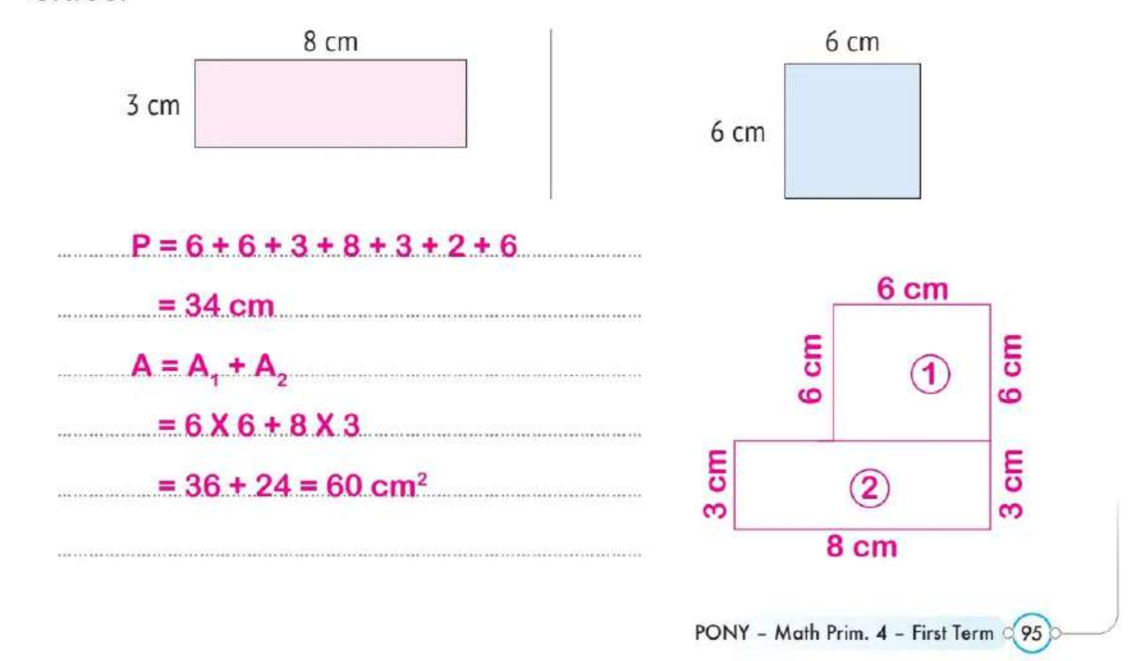
$= 20$ cm

$A = A_1 + A_2$

$= 4 \times 2 + 4 \times 2$

$= 8 + 8 = 16$ cm^2

2 Combine the following two geometric shapes to form one odd shape. Calculate the area and perimeter of this shape. Draw your geometric figure and write the measurements on the sides.



$P = 6 + 6 + 3 + 8 + 3 + 2 + 6$

$= 34$ cm

$A = A_1 + A_2$

$= 6 \times 6 + 8 \times 3$

$= 36 + 24 = 60$ cm^2

3 **Combine the following two geometric shapes to form one odd shape. Calculate the area and perimeter of this shape. Draw your geometric figure and write the measurements on the sides.**

6 cm

2 cm

5 cm

4 cm

$P = 5 + 4 + 2 + 6 + 2 + 1 + 4$

$= 24$ cm

$A = A_1 + A_2$

$= 5 \times 4 + 6 \times 2$

$= 20 + 12 = 32$ cm^2

5 cm

4 cm

1

4 cm

1 cm

2 cm

2

2 cm

6 cm

Assessment 4 on Lesson 4

Unit 4

1 Choose the correct answer:

ⓐ 2 km + 50 m = ... **2,050** ..... m (53 or 250 or 2,500 or [2,050])

ⓑ 45 + 35 = ... **125** ..... − 45 (35 or 80 or 145 or [125])

ⓒ 50 m + 5 dm = ... **5,050** ..... cm (505 or [5,050] or 550 or 55)

ⓓ A **kilogram** is a measuring unit of ..... **mass** ..... .

(length or [mass] or capacity or time)

ⓔ The digit ..... **2** ..... in 745,215,369 is in the **Hundred Thousands** place. (9 or 3 or [2] or 7)

2 Complete the following:

ⓐ A rectangle has an area of **30** cm^2 and a length of **10** cm. Then its perimeter is ..... **26** ..... .

ⓑ 36,000,250: **(In Word Form)**

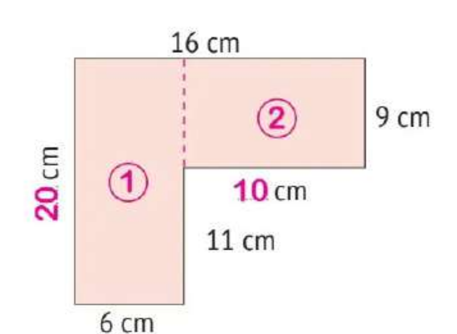
..... **Thirty-six million, two hundred fifty.** ..... .

ⓒ 120 hours = ... **5** ..... days

ⓓ 7,145 ≈ 7,100 *(Rounded to the nearest* ..... **100** .....*)*

ⓔ A square whose sides are **100** mm, its area is ..... **100** ..... cm^2.

3 Calculate the **area** and **perimeter** of the following shape:



P = 16 + 9 + 10 + 11 + 6 + 20

= 72 cm

$A = A_1 + A_2$

= 20 X 6 + 10 X 9

= 120 + 90 = 210 cm^2

Assessment on Concept 1

Unit 4

1 Choose the correct answer:

ⓐ The perimeter of a square with side length **5** cm is ....**20**........ cm.

(10 or 15 or 25 or [20])

ⓑ The area of a rectangle with dimensions **7** cm and **2** cm is ....**14**.... cm^2.

(27 or 18 or 9 or [14])

ⓒ ....m^2........ is a unit of measuring area. (km or cm or mm or [m^2])

2 Complete:

5 cm, 1cm, 1cm, 2 cm, 2 cm, 3 cm, 3 cm, 9 cm

ⓐ The perimeter of the opposite figure is

= ....**26 cm**........ .

ⓑ The length of a rectangle is **3** times its width. If its width is **6** m, then its length is ....**18 m**........ m.

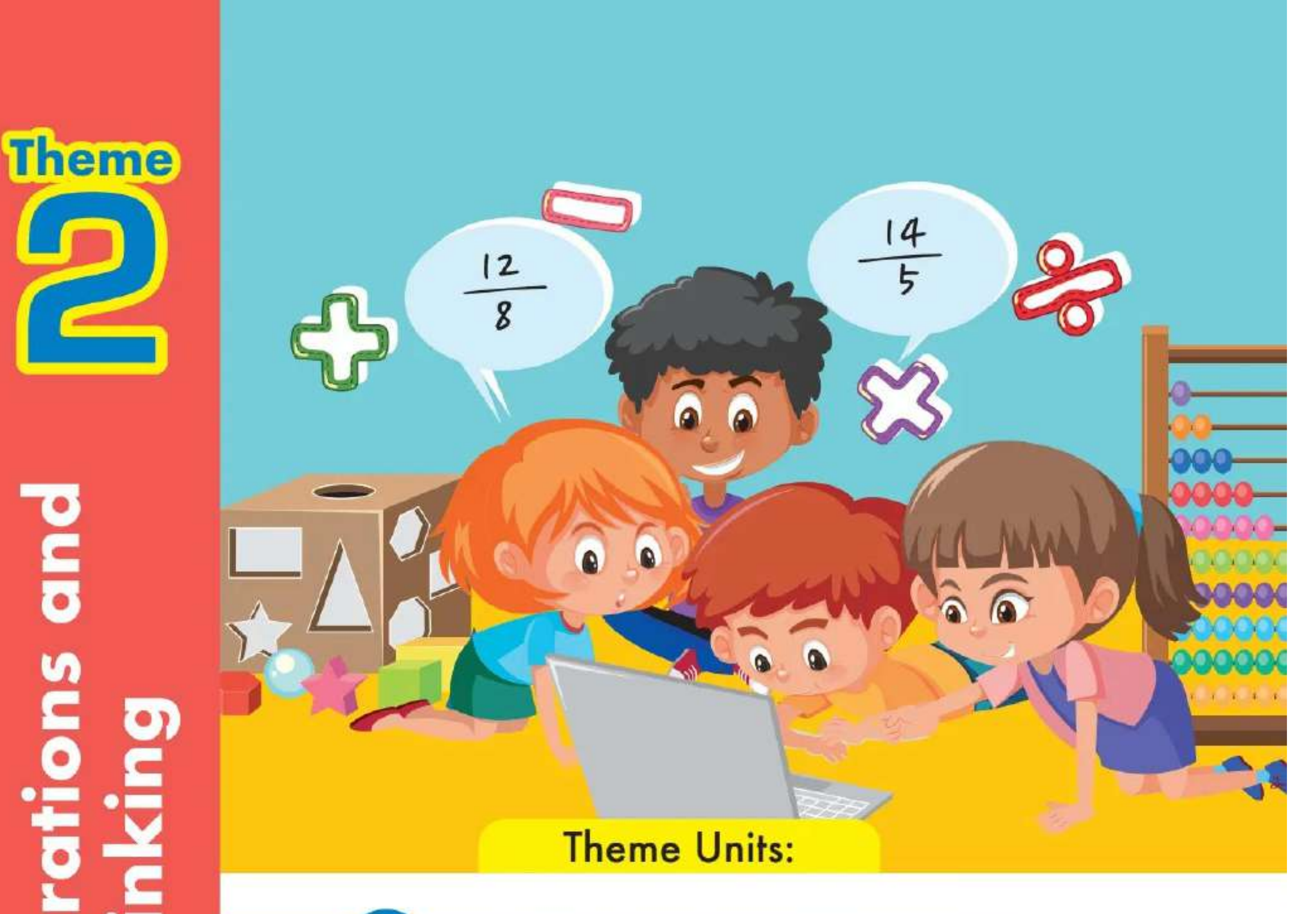
ⓒ If the area of a square is **49** m^2, then its perimeter is ....**28 m**........ .

3 Complete using ($<$, $=$ or $>$):

ⓐ	The perimeter of a rectangle with a length of **6** cm and a width of **4** cm	$<$	The perimeter of a square with a side length **6** cm
ⓑ	The side length of a square with a perimeter of **36** cm	$>$	The side length of a square with an area of **25** cm^2
ⓒ	The area of a square with a side length **4** cm	$<$	The area of a rectangle with dimensions **9** cm and **3** cm

Theme 2

Mathematical Operations and Algebraic Thinking



Theme Units:

Unit 5 Multiplication as a Relationship

Concept 5.1 Multiplicative Comparisons

Lessons 1–3

Multiplicative Comparison
Creating Multiplicative Comparison Equations
Solving Multiplicative Comparison Equations

1 **Write equations for the following comparisons. Use a symbol "letter" to represent the unknown number:**

a) 5 times greater than 3 is .... **Equation:** $5 \times 3 = a$.

b) 7 times more than 6 is .... **Equation:** $6 \times 7 = b$.

c) 3 times as many as 8 is .... **Equation:** $3 \times 8 = c$.

d) .... is 4 times as many as 9. **Equation:** $d = 4 \times 9$.

e) .... is 2 times more than 6. **Equation:** $e = 2 \times 6$.

f) .... is 5 times greater than 7. **Equation:** $f = 5 \times 7$.

g) 28 is 7 times greater than .... **Equation:** $28 = 7 \times m$.

h) 35 is 5 times more than .... **Equation:** $35 = 5 \times h$.

i) 48 is 6 times as many as .... **Equation:** $48 = 6 \times k$.

j) 49 is .... times as many as 7. **Equation:** $49 = f \times 7$.

k) 64 is .... times as many as 8. **Equation:** $64 = p \times 8$.

l) 42 is .... times as many as 6. **Equation:** $42 = a \times 6$.

2 **Write the multiplication equation that represents each of the following sentences. (Use a letter to represent the unknown number):**

a) Ahmed's age is three times Maha's age. If Maha is 5 years old, how old is Ahmed?

$x = 3 \times 5$.

....

b A square has sides of **3** cm.

Write an equation showing the **perimeter** of the square (P).

p = 3 x 4

c A rectangle is of **6** cm length and **4** cm width.

Write an equation that shows the **area** of the rectangle (A).

A = 4 x 6

d Hazem has **five times** the money that Karim has.

If Hazem has **45** pounds, what is the amount of money that Karim has?

45 = 5 x a

e If the price of one pen is **3** pounds, what is the price of **7** pens?

b = 7 x 3

3 Find the value of the unknown in each of the following equations. (Solve the equations):

a $x \times 5 = 35$, x = 35 ÷ 5 = 7 .

b $y \times 8 = 48$, y = 48 ÷ 8 = 6 .

c $m \times 9 = 45$, m = 45 ÷ 9 = 5 .

d $6d = 30$, d = 30 ÷ 6 = 5 .

e $7n = 14$, n = 14 ÷ 7 = 2 .

f $9a = 54$, a = 54 ÷ 9 = 6 .

g $e = 8 \times 6$, e = 48 .

h $k = 3 \times 6$, k = 18 .

i $q = 6 \times 4$, q = 24 .

j $s = 5 \times 2$, s = 10 .

4 **Write equations for the following comparisons. Use letters to represent the unknowns, then find the value of them:**

a. What number is 6 times more than 3? **Equation :** $x = 6 \times 3$.
Answer : $x = 18$.

b. What number is 7 times as many as 5? **Equation :** $y = 7 \times 5$.
Answer : $y = 35$.

c. What number is 3 times more than 8? **Equation :** $z = 3 \times 8$.
Answer : $z = 24$.

d. What number is 5 times greater than 9? **Equation :** $m = 5 \times 9$.
Answer : $m = 45$.

e. 45 is 9 times greater than what number? **Equation :** $45 = 9 \times a$.
Answer : $a = 45 \div 9 = 5$.

f. 40 is 5 times more than what number? **Equation :** $40 = 5 \times b$.
Answer : $b = 40 \div 5 = 8$.

g. 12 is 3 times as many as what number? **Equation :** $12 = 3 \times m$.
Answer : $m = 12 \div 3 = 4$.

h. 21 is 7 times as many as what number? **Equation :** $21 = 7 \times n$.
Answer : $n = 21 \div 7 = 3$.

5 **Complete the following:**

a. The equation that represents "24 is 3 times more than a number"
is $24 = 3 \times a$.

b. The equation that represents "54 is 9 times greater than a number"
is $54 = 9 \times b$.

c. The equation that represents "a number is 5 times as many as 2"
is $x = 5 \times 2$.

ⓓ The equation that represents "a number is **7 times** greater than **3**"

is .... $y = 7 \times 3$ ....

ⓔ If $3x = 18$, then x = ... $18 \div 3 = 6$ ....

ⓕ If $6y = 42$, then y = ... $42 \div 6 = 7$ ....

ⓖ If $28 = 4 \times m$, then m = ... $28 \div 4 = 7$ ....

ⓗ If $a = 6 \times 9$, then a = ... 54 ....

6 Read the story problems and think about the comparisons, then write the multiplication equation that represents each problem:

Use a **letter** to represent the unknown number. Then solve the equations:

ⓐ Rashad's team scored **9** goals in football. This is **3 times** greater than the number of goals scored by Yassin's team.

How many goals did Yassin's team score?

Equation : .... $9 = 3 \times a$ ....

Answer : .... $a = 9 \div 3 = 3$ goals ....

ⓑ Wafaa has **18 pounds**. This is equal to **3 times** more than what Hana has. How many pounds does Hana have?

Equation : .... $18 = 3 \times b$ ....

Answer : .... $b = 18 \div 3 = 6$ pounds ....

ⓒ Saleh has **15 apples** and his sister Hala has **5 apples**.

How many more times does Saleh have the same number of apples as Hala?

Equation : .... $15 = a \times 5$ ....

Answer : .... $a = 15 \div 5 = 3$ times ....

d The height of a residential tower is 36 meters and the height of a tree is 6 meters. How many times is the height of the residential tower as the height of the tree? **Equation :** $36 = m \times 6$.

Answer : $m = 36 \div 6 = 6$ times .

e Hani is twice as old as his brother.

His brother is 8 years old. How old is Hani? **Equation :** $x = 2 \times 8$.

Answer : $x = 16$ years .

f The distance from Samir's house to the bank is 5 times the distance from his house to the museum. If his house is 20 kilometers from the museum, how many kilometers is his house from the bank?

Equation : $y = 5 \times 20$.

Answer : $y = 100$ km .

7 Choose the correct answer:

a Sameh is three times the age of his brother. His brother is 4 years old. Which of the following equations is used to know the age of Sameh?

$a = 3 \times 4$. ($a = 4 \div 3$ or $a = 3 + 4$ or $a = 4 - 3$ or $a = 3 \times 4$)

b Sarah and her sister peeled some oranges. Sarah peeled 6 oranges. Sarah's sister peeled 3 times as many oranges as Sarah. Which of the following equations can be solved to find the number of oranges that Sarah's sister peeled? $n = 3 \times 6$.

($n \times 3 = 6$ or $n = 3 \times 6$ or $n = 6 \div 3$ or $n = 6 + 3$)

c An aquarium contains 5 red fish and 3 times as many blue fish.

How many blue fish are in the tank? 15 . (53 or 15 or 8 or 2)

d If $3x = 9$, then $x =$ 3 . (3 or 27 or 12 or 6)

e If $6 \times y = 24$, then $y =$ 4 . (8 or 18 or 30 or 4)

f The equation "$m = 4 \times 2$" represents a number equal to four times 2 .

(4 times more than 2 or 4 times more than 4 or 2 times more than 2 or 8 times more than 4)

Assessment 1 on Lessons 1–3

Unit 5

1 Choose the correct answer:

ⓐ Three milliard, twenty-five thousand, two hundred: 3,000,025,200
(In standard form) (3,025,200 or 3,000,025,200 or 3,000,000,225 or 325,200)

ⓑ If 6 x ***m*** = 18, then **18** is ...... 6 ...... times as many as ***m***.
(3 or 6 or 2 or 18)

ⓒ A square with side length **S** and perimeter **P**, the equation that represents the perimeter is P = 4 x S. (P = S + S or P = S X S or P = S + 4 or P = 4 X S)

ⓓ A square has an area of **36** cm^2, then its perimeter is ...... 24 ....
(9 or 24 or 12 or 81)

ⓔ 8 + 8 + 8 + 8 = ... 8 x 4 ...... (8 + 8 or 8 X 8 or 8 X 4 or 8 + 4)

2 Complete the following:

ⓐ The value of the digit 5 in the **Hundred Millions** place is 500,000,000 .

ⓑ If 24 is **six times** ***a***, then 24 = ... 6 x a ....

ⓒ 16 + 35 = ... 35 ...... + 16 (*Commutative Property*)

ⓓ If 45 = 9 X ***u***, then 45 is ...... 9 ...... times more than ***u***.

ⓔ (7 X 100,000,000) + (2 X 1,000,000) + (8 X 10,000) + (3 X 100)
= 702,080,300 **(In standard form)**

3 Arrange the following numbers in an ascending order:

450,005 , 850,600 , 200,755 , 360,450

...... 200,755 ...... , ... 360,450 ...... , ... 450,005 ...... , ... 850,600 ......

4 Write an equation to compare each of the following:

ⓐ 12 and 4 **Equation:** ...... 12 = 4 x a ....

ⓑ 20 and 5 **Equation:** ...... 20 = 5 x m ....

ⓒ 16 and 8 **Equation:** ...... 16 = 8 x y ....

ⓓ 54 and 9 **Equation:** ...... 54 = 9 x z ....

Assessment on Concept 1

Unit 5

1 Choose the correct answer:

ⓐ If **24** is **8** times more than a number, then this number is ....3.... .

(5 or 3 or 8 or 2)

ⓑ ....35.... is 5 times greater than 7.

(14 or 35 or 21 or 28)

ⓒ The age of Kenzy is 3 times as the age of Retage. If Retage is **6** years old, then the equation ....$3 \times 6 = b$.... represents the age of Kenzy.

($3 + 3 + 3$ or $b \times b = 3$ or $3 \times 6 = b$ or $3 \times b = 6$)

2 Complete the following:

ⓐ ....54.... $= 6 \times 9$, then ....54.... is ....6.... times more than **9**

ⓑ Ahmed has **4** apples and his friend has **36** apples. The number of apples with Ahmed's friend is ....9.... times more than what Ahmed has.

ⓒ 16 is ....8.... times greater than 2.

3 Answer the following:

ⓐ Fouad is 56 years old, which is 7 times as the age of his grandson Ahmed. How old is Ahmed? Write an equation representing this comparison and then solve it.

Equation: ....$56 = 7 \times b$.... .

Solution: ....$b = 56 \div 7 = 8$ years.... .

ⓑ **Find the value of the unknown:**

1. If $c \times 8 = 32$, then $c =$ ....$32 \div 8 = 4$.... .
2. If $a = 9 \times 5$, then $a =$ ....$9 \times 5 = 45$.... .

Concept 5.2 Properties and Patterns of Multiplication

Lessons 4&5 Commutative Property of Multiplication Identity Property and the Zero Property

1 Find the product of each of the following:

ⓐ 5 X 1 = 5 ⓑ 1 X 6 = 6

ⓒ 9 X 0 = 0 ⓓ 0 X 9 = 0

ⓔ 4 X 10 = 40 ⓕ 6 X 100 = 600

ⓖ 7 X 1,000 = 7,000 ⓗ 12 X 20 = 240

ⓘ 15 X 100 = 1,500 ⓙ 12 X 10,000 = 120,000

ⓚ 564 X 1,000 = 564,000

2 Complete the following:

ⓐ 8 X 3 = 3 X 8 ⓑ 9 X 7 = 7 X 9

ⓒ 6 X 2 = 2 X 6 ⓓ 12 X 6 = 6 X 12

ⓔ 9 X 1 = 9 ⓕ 1 X 4 = 4

ⓖ 7 X 0 = 0 ⓗ 0 X 5 = 0

ⓘ 8 X 10 = 80 ⓙ 5 X 100 = 500

ⓚ 9 X 1,000 = 9,000 ⓛ 40 X 10 = 400

ⓜ 17 X 100 = 1,700 ⓝ 48 X 1,000 = 48,000

ⓞ 120 X 1,000 =120,000

3 Complete using (<, = or >):

ⓐ 6 X 1 > 5 X 1 ⓑ 9 X 0 = 8 X 0

ⓒ 3 X 1 > 0 X 7 ⓓ 40 X 2 = 4 X 20

4 **Find the value of the unknown (χ) in each of the following:**

a) If $\chi \times 10 = 200$, then χ = 20 .

b) If $30 \times \chi = 6,000$, then χ = 200 .

c) If $\chi \times 500 = 20,000$, then χ = 40 .

d) If $\chi \times 7 = 7 \times 9$, then χ = 9 .

e) If $60 \times 30 = 30 \times \chi$, then χ = 60 .

f) If $200 \times \chi = 100,000$, then χ = 500 .

5 **The length of an ant is about 2 mm. If the length of the turtle is 100 times the length of the ant. Find the length of the turtle.**

2 x 100 = 200 mm

6 **Ahmed saves 200 pounds every month. How much will he save after six months?**

200 x 6 = 1,200 pounds

7 **The price of one pen is 90 piasters. How much are 20 pens?**

90 x 20 = 1,800 piasters

8 **The bookcase in a library contains 5 shelves, each shelf has 30 books. How many books are there in the bookcase?**

30 x 5 = 150 books

9 **Alia has 12 marbles. Write an equation using the Commutative Property of Multiplication to describe two ways in which the marbles can be arranged.**

3 x 4 = 4 x 3 2 x 6 = 6 x 2

10 **Saleem has 24 erasers. Write an equation using the Commutative Property of Multiplication to describe two ways in which he can arrange the erasers.**

3 x 8 = 8 x 3 4 x 6 = 6 x 4

Assessment 2 on Lessons 4&5

Unit 5

1 Choose the correct answer:

a) 50 X ...40... = 2,000 (4 or 40 or 400 or 4,000)

b) If a X 6 = 24, then a = ...4... . (30 or 4 or 6 or 24)

c) The value of the digit 6 in the **Millions** place = ...1,000... times the value of the digit 6 in the **Thousands** place. (10 or 100 or 1,000 or 10,000)

d) The equation that shows "48 is **six times** greater than m" is ...6 x m = 48...
(8 + m = 48 or 8 X m = 48 or 48 X m = 6 or 6 X m = 48)

e) 80 + 0 + 0 + 0 + 5 = ...85... (800,005 or 805 or 85 or 8,005)

2 Complete the following:

a) (3 + 12) + ...4... = ...3... + (12 + 4).

b) 60 X 5,000 = ...300,000...

c) 200 Hundred Thousands = ...20... Millions

d) ...500... X 20 = 10,000

e) 8 X ...1... = 8

3 Find the result of each of the following:

a) 45,652 + 44,349 = ...90,001...

b) 70,208 – 35,026 = ...35,182...

c) 80 X 50 = ...4,000...

d) 30 X 1,000 = ...30,000...

4 The height of a tree is 2 meters, and the height of a residential building is 10 times the height of the tree.
How high is the residential building?

...10 x 2 = 20 m....

Theme 2

Lessons 7&8 Associative Property of Multiplication Applying Patterns in Multiplication

1 Find using the Associative Property of Multiplication:

a) 6 X 2 X 10 = (6 X 2) X 10 = 12 X 10 = 120

b) 5 X 4 X 6 = (5 X 4) X 6 = 20 X 6 = 120

c) 8 X 5 X 5 = (8 X 5) X 5 = 40 X 5 = 200

d) 10 X 6 X 8 = (10 X 6) X 8 = 60 X 8 = 480

e) 8 X 6 X 5 = 8 X (6 X 5) = 8 X 30 = 240

f) 10 X 6 X 9 = 10 X (6 X 9) = 10 X 54 = 540

g) 5 X 2 X 10 = 5 X (2 X 10) = 5 X 20 = 100

h) 8 X 10 X 10 = 8 X (10 X 10) = 8 X 100 = 800

2 Complete the following:

a) (2 X 7) X 8 = 2 X (7 X 8)

b) (7 X 9) X 2 = 7 X (9 X 2)

c) (2 X 4) X 8 = 2 X (4 X 8)

d) (7 X 3) X 10 = 7 X (3 X 10)

e) (12 X 5) X 20 = 12 X (5 X 20)

f) (8 X 10) X 2 = 8 X (10 X 2)

g) (35 X 22) x 9 = 35 X (22 x 9)

h) (25 X 18) x 16 = 25 X (18 x 16)

3 Complete the following:

a) 6 X 100 = 600

b) 400 X 5 = 2,000

c) 8 X 50 = 400

d) 100 X 100 = 10,000

e) 40 X 5 = 200

f) 9 X 4,000 = 36,000

g) 5,000 = 50 **Hundreds**

h) 200 = 2 **Hundreds**

i) 6,000 = 600 **Tens**

j) 20,000 = 20 **Thousands**

k) 40,000 = 400 **Hundreds**

l) 50,000 = 5,000 **Tens**

4 Use decomposing a number into its factors and the Associative Property of Multiplication to solve each of the following:

ⓐ 6 X 20 = 6 X (2 x 10) = (6 X 2) X 10 = 12 x 10 = 120

ⓑ 9 X 200 = 9 X (2 X100) = (9 X 2) X100 = 18 x100 = 1,800

ⓒ 7 X 3,000 = 7 X (3 X 1,000) = (7 X 3) X1,000= 21 x 1,000 =21,000

ⓓ 2 X 80 = 2 X (8 X 10) = (2 X 8) X 10 = 16 x 10 =160

ⓔ 3 X 50 = 3 X (5 X 10) = (3 X 5) X 10 = 15 x 10 =150

ⓕ 9 X 500 = 9 X (5 X 100) = (9 X 5) X 100 = 45 X 100 = 4,500

ⓖ 8 X 2,000 = 8 X (2 X 1,000) = (8 X 2) X1,000= 16 X 1,000 =16,000

ⓗ 3 X 70 = 3 x 70 = 3 x (7 x 10) = (3 x 7) x 10 = 21 x 10 = 210

ⓘ 9 X 80 = 9 x 80 = 9 x (8 x 10) = (9 x 8) x 10 = 72 x 10 = 720

ⓙ 6 X 300 = 6 x 300 = 6 x (3 x 100) = (6 x 3) x 100 = 18 x 100 = 1,800

ⓚ 8 X 700 = 8 x 700 = 8 x (7 x 100) = (8 x 7) x 100 = 56 x 100 = 5,600

ⓛ 9 X 3,000 = 9 x 3,000 = 9 x (3 x 1,000) = (9 x 3) x 1,000 = 27 x 1,000 = 27,000

ⓜ 3 X 2,000 = 3 x 2,000 = 3 x (2 x 1,000) = (3 x 2) x 1,000 = 6 x 1,000 = 6,000

5 Complete the following:

ⓐ 7 X 50 = 35 X 10

ⓑ 6 X 300 = 18 X 100

ⓒ 4 X 60 = 24 x 10

ⓓ 6 X 200 = 12 X 100

ⓔ 9 X 50 = 45 X 10

ⓕ 8 X 300 = 24 X 100

ⓖ 2 X 60 = 12 X 10

ⓗ 4 X 8,000 = 32 X 1,000

ⓘ (8 X 5) X 6 = 40 X 6 = 240

ⓙ (3 X 2) X 20 = 6 X 20 = 120

ⓚ (6 X 20) X 10 = 120 X 10 = 1,200

ⓛ (2 X 3) X 9 = 6 X 9 = 54

ⓜ (8 X 10) X 4 = 80 X 4 = 320

ⓝ (5 X 6) X 20 = 30 X 20 = 600

6 Choose the correct answer:

a) 7 X (3 X 5) = (......7...... X 3) X 5 (21 or [7] or 5 or 3)

b) (8 X 2) X 10 = ...16...... X 10 (20 or 8 or 2 or [16])

c) 5 X 50 = ...25...... X 10 (5 or [25] or 10 or 250)

d) 30 X 40 = 12 X ......100...... (34 or 10 or [100] or 1,000)

e) 2 X ......900...... = 18 X 100 (18 or 9 or 90 or [900])

f) 8 X 20 = ...16...... X 10 ([16] or 8 or 2 or 10)

g) 6 X 300 = 18 X ......100...... (9 or 10 or [100] or 1,000)

h) ......5...... X 200 = 10 X 100 (100 or [5] or 50 or 10)

7 Complete using (< , = or >):

a) 8 X 21 > 8 X 7 X 2

b) 18 X 5 = 6 X 3 X 5

c) 5 X 12 > (5 X 2) X 4

d) 20 X 90 = 6 X 300

e) 40 X 100 < 50 X 800

f) 900 Thousands < 90 Millions

g) 30 X 100 < 300 Hundreds

h) 240 X 100 < 600 X 400

i) 20 Thousands = 500 X 40

j) 25 X 0 = 4 X (2 X 0)

k) 20 X 100 < 50 X 400

l) 10 X 4,000 > 80 X 50

8 Match:

a) (2 X 5) X 6	→ 2	3 X 800	1
b) 8 X 30	→ 5	10 X 6	2
c) 24 X 100	→ 1	400 X 100	3
d) 800 X 50	→ 3	18 x 5	4
e) 3 X (6 X 5)	→ 4	24 X 10	5

9 Use the Associative Property of Multiplication to calculate the number of pens in the opposite picture.

$3 \times 4 \times 3 = (3 \times 4) \times 3 = 12 \times 3 = 36$ pens

10 Use the Associative Property of Multiplication to calculate the number of books in the opposite picture.

$4 \times 4 \times 2 = 4 \times (4 \times 2) =$

$4 \times 8 = 32$ books

11 Emad bought 5 packs of water bottles. Each pack contains 4 rows of bottles, each row has 3 bottles. Use the Associative Property of Multiplication to calculate the number of water bottles that Emad bought.

$5 \times 4 \times 3 = (5 \times 4) \times 3 = 20 \times 3 = 60$ bottles

12 The library has 10 bookcases, each bookcase has 5 shelves and each shelf has 8 books. Use the Associative Property of Multiplication to calculate the number of books in the library.

$10 \times 5 \times 8 = 10 \text{ X } (5 \times 8) = 10 \times 40 = 400$ books

Assessment 3 on Lessons 7&8

Unit 5

1 Choose the correct answer:

(a) 8 X 300 = 24 X ...100... (300 or 10 or 100 or 1,000)

(b) Three hundred thirty million, three thousand = 330,003,000
(In standard form) (300,030,003 or 330,000,030 or 330,003,000 or 330,300)

(c) 40 X 50 = 2 X ...1,000... (9 or 10 or 100 or 1,000)

(d) 50 X 2 = 10 X ...10... (10 or 100 or 1,000 or 50)

(e) If 45 = 9 X a, then a = ...5... (54 or 45 or 9 or 5)

2 Complete the following:

(a) (9 X 2) X 5 = 9 X (...2... X ...5...)

(b) ...200... **Hundreds** = 400 X 50

(c) The value of the digit 9 in the **Hundred Millions** place is 900,000,000 .

(d) (8 X 100,000,000)+ (6 X 100,000)+(3 X 1,000)+ (4 X 100) +(2 X 1)
= ...800,603,402... **(In standard form)**

(e) 8 X 30 = 8 X (...3... X 10) = (8 X 3) X ...10... = ...24... X 10 = ...240...

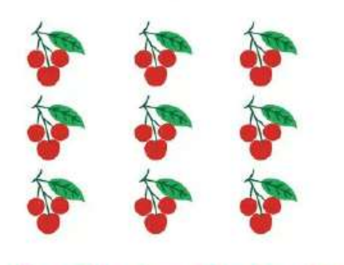
3 Arrange the following numbers in an ascending order:

450,000,002 , 405,200,000 , 450,200,000 , 405,000,002

405,000,002 , 405,200,000 , 450,000,002 , 450,200,000

4 Use the Associative Property of Multiplication to calculate the number of fruits in the following pictures:

(a)



(3 x 3) x 3 = 9 x 3 = 27

(b)

(4 x 4) x 3 = 16 x 3 = 48

Assessment on Concept 2

Unit 5

1 Choose the correct answer:

ⓐ Which of the following represents the Associative Property? ....

($(2 \times 3) \times 5 = 2 \times (3 \times 5)$ or $4 \times 1 = 4$ or $3 + 6 = 6 + 3$ or $5 \times 0 = 0$)

ⓑ $3 \times 700 = 3 \times 100 \times$ ......7...... (7 or 30 or 500 or 21)

ⓒ The Multiplicative Identity Element is ......1...... .

(1 or 2 or 0 or 3)

2 Complete:

ⓐ **If** $14 \times 5 = 70$, **then** ......5...... X ......14...... = 70. **(Commutative Property)**

ⓑ **If** $a \times 3 = 3 \times 9$, **then** a = ...9...... .

ⓒ $4 \times 5 \times 3$ = (......4...... X ......5......) X ......3......

= ......20...... X ......3......

= ......60......

3 Find the value of the unknown:

ⓐ $65 \times c = 65{,}000$

$c = 65{,}000 \div 65$.

$= 1{,}000$.

ⓑ $8 \times 80 = b$

$b = 640$.

....

ⓒ $y \times 400 = 3{,}600$

$y = 3{,}600 \div 400$.

$= 9$.

Unit 6 Factors and Multiples

Concept 6.1 Understanding Factors

Lessons 1&2 Identifying Factors of Whole Numbers
Prime and Composite Numbers

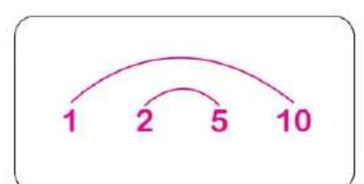
1 Find all the factors of each number using a factor T-chart and a factor rainbow:

ⓐ 10

The factors of 10 are:

1 , 2 , 5 , 10

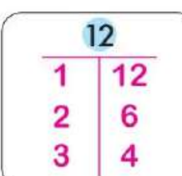
10	
1	10
2	5

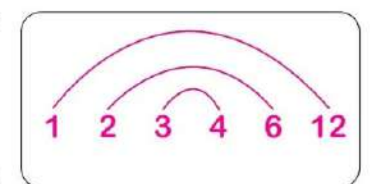


ⓑ 12

The factors of 12 are:

1 , 2 , 3 , 4 , 6 , 12

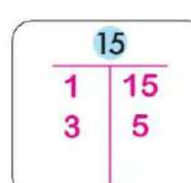


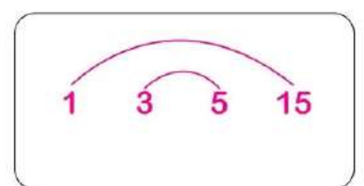


ⓒ 15

The factors of 15 are:

1 , 3 , 5 , 15

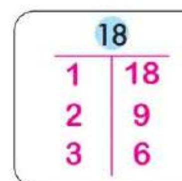


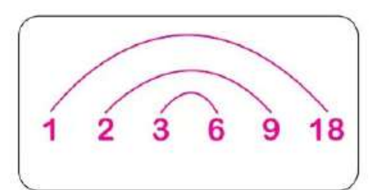


ⓓ 18

The factors of 18 are:

1 , 2 , 3 , 6 , 9 , 18

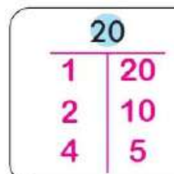


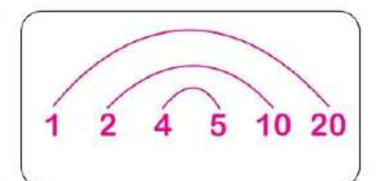


ⓔ 20

The factors of 20 are:

1 , 2 , 4 , 5 , 10 , 20



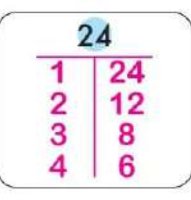


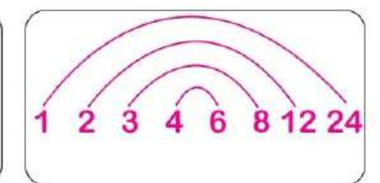
f 24

The factors of 24 are:

1 , 2 , 3 , 4 , 6 , 8 ,

12 , 24



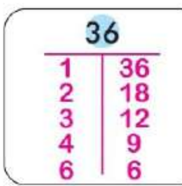


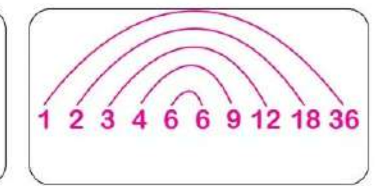
g 36

The factors of 36 are:

1 , 2 , 3 , 4 , 6 , 9 ,

12 , 18 , 36



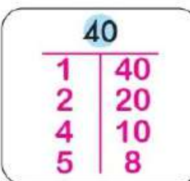


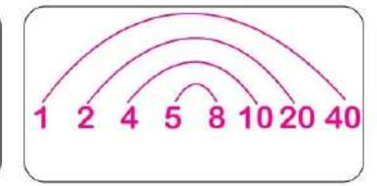
h 40

The factors of 40 are:

1 , 2 , 4 , 5 , 8 , 10 ,

20 , 40

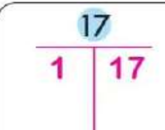


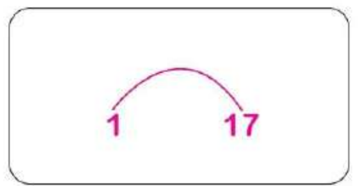


i 17

The factors of 17 are:

1 , 17

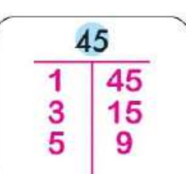


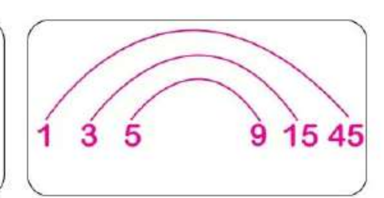


j 45

The factors of 45 are:

1 , 3 , 5 , 9 , 15 , 45





2 **Find all the factors of each of the following numbers:**
(Use the method you prefer)

a 13

1	13

The factors of **13** are:

1 , 13

b 60

1	60
2	30
3	20
4	15
5	12
6	10

The factors of **60** are:

1 , 2 , 3 , 4 , 5 , 6 , 10 , 12 , 15 , 20 , 30 , 60

c 28

1	28
2	14
4	7

The factors of **28** are:

1 , 2 , 4 , 7 , 14 , 28

d 14

1	14
2	7

The factors of 14 are:

1 , 2 , 7 , 14

e 50

1	50
2	25
5	10

The factors of 50 are:

1 , 2 , 5 , 10 , 25 , 50

f 32

1	32
2	16
4	8

The factors of 32 are:

1 , 2 , 4 , 8 , 16 , 32

3 Using the 100 Chart: Answer by yourself.

a **Count by skipping 2s, shade the numbers you say while counting.**

(Write the multiples of 2).

2 , 4 , 6 , 8 , 10 , 12 , 14 , 16 , 18 , 20 ,
22 , 24 , 26 , 28 , 30 , 32 , 34 , 36 , 38 , 40 ,
42 , 44 , 46 , 48 , 50 , 52 , 54 , 56 , 58 , 60 ,
62 , 64 , 66 , 68 , 70 , 72 , 74 , 76 , 78 , 80 ,
82 , 84 , 86 , 88 , 90 , 92 , 94 , 96 , 98 , 100 .

b **Count by skipping 5s, shade the numbers you say while counting.**

(Write the multiples of 5).

5 , 10 , 15 , 20 , 25 , 30 , 35 , 40 , 45 , 50 ,
55 , 60 , 65 , 70 , 75 , 80 , 85 , 90 , 95 , 100 .

c **Count by skipping 10s, shade the numbers you say while counting.**

(Write multiples of 10).

10 , 20 , 30 , 40 , 50 , 60 , 70 , 80 , 90 , 100 .

d **Write the common multiples of 2, 5 and 10:**

10 , 20 , 30 , 40 , 50 , 60 , 70 , 80 , 90 , 100 .

4 Write down all the factors of the following numbers. Then write if the number is prime or composite:

	Number	Factors	Number of Factors	Prime or Composite
a	6	1 , 2 , 3 , 6	4	Composite
b	19	1 , 19	2	Prime
c	22	1 , 2 , 11 , 22	4	Composite
d	31	1 , 31	2	Prime
e	14	1 , 2 , 7 , 14	4	Composite
f	30	1 , 2 , 3 , 5 , 6 , 10 , 15 , 30	8	Composite
g	25	1 , 5 , 25	3	Composite
h	23	1 , 23	2	Prime
i	11	1 , 11	2	Prime

5 Complete with a tick (✓) under the factors of the number:

Number	Factors of the Number				
	2	3	6	9	5
8	✓	✗	✗	✗	✗
9	✗	✓	✗	✓	✗
25	✗	✗	✗	✗	✓
12	✓	✓	✓	✗	✗
15	✗	✓	✗	✗	✓
10	✓	✗	✗	✗	✓
18	✓	✓	✓	✓	✗
27	✗	✓	✗	✓	✗
28	✓	✗	✗	✗	✗
32	✓	✗	✗	✗	✗
30	✓	✓	✓	✗	✓
36	✓	✓	✓	✓	✗
45	✗	✓	✗	✓	✓
60	✓	✓	✓	✗	✓
90	✓	✓	✓	✓	✓

6 **Using the 100 Chart:**

Circle the numbers (2 ,3 ,5 ,7). Then cross out all the multiples of these numbers. Circle all the remaining numbers, except one. The encircled numbers are prime numbers. Write these numbers.

2 , 3 , 5 , 7 , 11 , 13 , 17 , 19 , 23 , 29 , 31 , 37 , 41 , 43 , 47 , 53 , 59 , 61 , 67 , 71 , 73 , 79 , 83 , 89 , 97

7 **Complete each of the following:**

a. A prime number between 30 and 40 whose Ones digit is greater than its Tens digit is ..... 37 ..... .

b. An **even** number between 20 and 30, some of its factors include the numbers 1, 2 , 4 , 8 is ..... 24 ..... .

c. An **odd** number between 20 and 30, some of its factors are: 1, 3, 7 is ..... 21 ..... .

d. A prime number that lies between 30 and 40, and the digit in the Tens place is greater than the digit in the Ones place is ..... 31 ..... .

e. A prime number that lies between 50 and 60, and the digit in the Tens place is less than the digit in the Ones place is ..... 59 ..... .

f. All prime numbers are ..... odd ..... numbers, except the number ..... 2 ..... is an even number.

g. The smallest prime number is ..... 2 ..... .

h. The smallest odd prime number is ..... 3 ..... .

i. An even prime number is ..... 2 ..... .

j. The prime numbers between 40 and 50 are ..... 41 , 43 , 47 ..... .

k. The number that has only two factors is called the ..... prime number ..... .

l. The **number of factors** of a prime number is ..... 2 ..... .

m) The whole number **one** is not a prime number because it has ...... one factor ...... only.

n) **6** is not a prime number because it has ...... more than two factors ....

8 Choose the correct answer:

a) ...... 17 ...... is a **prime** number. (64 or 15 or 17 or 21)

b) The **smallest odd** number is ...... 1 .... (1 or 2 or 3 or 5)

c) The **smallest** prime number is ...... 2 .... (1 or 2 or 3 or 4)

d) The **smallest odd** prime number is ...... 3 .... (0 or 1 or 2 or 3)

e) The **smallest even** prime number is ...... 2 .... (0 or 1 or 2 or 3)

f) The prime number has ...... two factors.

(one factor only or two factors or three factors or five factors)

g) The number that has only **two factors** is called a ...... prime ...... number.

(composite or prime or even or odd)

h) The whole number **one** is neither prime nor composite number because it has ...... one factor only ....

(no factors or two factors only or one factor only or more than two factors)

i) **10** is not a prime number because it has more than two factors.

(no factors or two factors only or one factor only or more than two factors)

j) **5** is a prime number because it has two factors only.

(no factors or two factors only or one factor only or more than two factors)

k) The number of factors of **14** is ...... 4 ...... factors. (3 or 2 or 4 or 6)

l) The number of factors of **16** is ...... 5 ...... factors. (3 or 4 or 5 or 6)

m) A number whose factors are **(1 ,2 ,4 ,5 ,10 ,20)** is ...... 20 ....

(20 or 10 or 100 or 200)

n) **9** is a/an ...... odd ...... number. (prime or even or odd or identity)

Assessment 1 on Lessons 1&2

Unit 6

1 Find the result:

ⓐ 4,589 + 1,628 = 6,217

ⓑ 9,028 – 4,409 = 4,619

ⓒ 500 X 80 = 40,000

ⓓ 8 X 400 = 32 X 100 = 3,200

2 Choose the correct answer:

ⓐ All prime numbers are **odd** numbers, except 2 is an **even** number.
(1 or 2 or 3 or 0)

ⓑ 45 million, 40 thousand, and 5 = 45,040,005 in **standard form**.
(50,004,400 or 45,400,500 or 45,040,005 or 45,040,500)

ⓒ 4 X (6 X 3) = (4 X 6) X 3 (Associative *Property)*
(Identity or Commutative or Associative or Distributive)

ⓓ A rectangle has a length of 5 cm and a width of 3 cm. Its area is 15 cm^2. (53 or 15 or 16 or 8)

ⓔ 6 is composite number because it has more than two factors.
(one factor only or two factors only or more than two factors or no factors)

3 Complete the following:

ⓐ The **smallest odd** prime number is 3

ⓑ (8 X 100,000,000) + (3 X 100,000) + (2 X 1,000) + (5 X 1)
(In standard form) = 800,302,005 .

ⓒ 90 X 300 = 27 X 1,000

ⓓ The prime numbers between 60 and 70 are 61 , 67 .

ⓔ The number of factors of 25 is 3 .

4 Find all the factors of each of the following numbers:

ⓐ 40

1	40
2	20
4	10
5	8

The factors of 40 are:
1 , 2 , 4 , 5 , 8 , 10 , 20 , 40

ⓑ 28

1	28
2	14
4	7

The factors of 28 are:
1 , 2 , 4 , 7 , 14 , 28

Lesson 3 Greatest Common Factor (GCF)

1 **Find the greatest common factor of each of the following numbers:**

ⓐ 10 , 15

Factors of 10 are: 1 , 2 , 5 , 10 .

Factors of 15 are: 1 , 3 , 5 , 15 .

The common factors are: 1 , 5 . The GCF is: 5 .

ⓑ 12 , 18

Factors of 12 are: 1 , 2 , 3 , 4 , 6 , 12 .

Factors of 18 are: 1 , 2 , 3 , 6 , 9 , 18 .

The common factors are: 1 , 2 , 3 , 6 . The GCF is: 6 .

ⓒ 6 , 8

Factors of 6 are: 1 , 2 , 3 , 6 .

Factors of 8 are: 1 , 2 , 4 , 8 .

The common factors are: 1 , 2 . The GCF is: 2 .

ⓓ 16 , 20

Factors of 16 are: 1 , 2 , 4 , 8 , 16 .

Factors of 20 are: 1 , 2 , 4 , 5 , 10 , 20 .

The common factors are: 1 , 2 , 4 . The GCF is: 4 .

ⓔ 21 , 14

Factors of 21 are: 1 , 3 , 7 , 21 .

Factors of 14 are: 1 , 2 , 7 , 14 .

The common factors are: 1 , 7 . The GCF is: 7 .

ⓕ 24 , 36

Factors of 24 are: 1 , 2 , 3 , 4 , 6 , 8 , 12 , 24 .

Factors of 36 are: 1 , 2 , 3 , 4 , 6 , 9 , 12 , 18 , 36 .

The common factors are: 1 , 2 , 3 , 4 , 6 , 12 . The GCF is: 12 .

ⓖ 48 , 32

Factors of 48 are: 1 , 2 , 3 , 4 , 6 , 8 , 12 , 16 , 14 , 48 .

Factors of 32 are: 1 , 2 , 4 , 8 , 16 , 32 .

The common factors are: 1 , 2 , 4 , 8 , 16 . The GCF is: 16 .

(h) 60 , 36

Factors of 60 are: 1 , 2 , 3 , 4 , 5 , 6 , 10 , 12 , 15 , 20 , 30 , 60 .

Factors of 36 are: 1 , 2 , 3 , 4 , 6 , 9 , 12 , 18 , 36 .

The **common factors** are: 1 , 2 , 3 , 4 , 6 , 12 . The **GCF** is: 12 .

2 **There are 28 girls and 21 boys in a class. The pupils will be divided into equal groups of girls and equal groups of boys. What is the largest number of groups that can be formed so that each group has the same number of pupils? How many boys are in each group of boys?**
How many girls are in each group of girls?

Largest number of groups (GCF) = 7

Number of girls in each group = 28 ÷ 7 = 4 girls.

Number of boys in each group = 21 ÷ 7 = 3 boys.

3 **A teacher is preparing snacks to be distributed among the students. she has 24 pieces of croissants and 16 pieces of sweets. What is the largest number of snacks the teacher can make if each meal contains exactly the same number of croissants and exactly the same number of sweets? How many croissants are there in each meal? How many sweets are there in each meal?**

Largest number of snacks (GCF) = 8

Number of croissants = 24 ÷ 8 = 3 croissants.

Number of sweets = 16 ÷ 8 = 2 sweets.

4 **Mohab works in flower arrangements, he has 21 red flowers and 14 blue flowers. If Mohab wanted all the arrangements to be identical and there were no flowers left, what is the greatest number of flower arrangements he could have? How many red flowers and blue flowers are there in each arrangement?**

Largest number of flower arrangements (GCF) = 7

Number of red flowers = 21 ÷ 7 = 3 flowers.

Number of blue flowers = 14 ÷ 7 = 2 flowers.

Assessment 2 on Lesson 3

Unit 6

1 Complete the following:

a) 50,002,000 = (5 X 10,000,000) + (2 X 1,000).

b) The **greatest common factor** of 9 and 6 is 3 .

c) 90 x 500 = 45,000

d) (6 x 5) x 80 = 30 x 80 = 2,400

e) 600,000,000 + 400,000 + 20,000 + 300 + 20 = 600,420,320

2 Choose the correct answer:

a) 4 X (20 X 7) = (4 X 20) X 7 (4 or 20 or 7 or 80)

b) The **greatest common factor** of 8 and 12 is 4 . (1 or 2 or 4 or 6)

c) 9 x 500 = 45 x 100 . (1 or 10 or 100 or 1,000)

d) A square has an area of 25 cm^2, its perimeter is 20 cm. (25 or 5 or 20 or 50)

e) 5,000 meters = 5 kilometers. (5 or 50 or 500 or 5,000)

3 Find the greatest common factor of 30 and 45:

1	30
2	15
3	10
5	6

1	45
3	15
5	9

Factors of 30 are: 1 , 2 , 3 , 5 , 6 , 10 , 15 , 30

Factors of 45 are: 1 , 3 , 5 , 9 , 15 , 45

The common factors are: 1 , 3 , 5 , 15 .

The greatest common factor (GCF) is: 15 .

4 Maryam practices swimming and spends a third of an hour swimming every day. What is the total number of minutes she spends swimming in 5 days?

5 x 20 = 100 minutes.

Assessment on Concept 1

Unit 6

1 Choose the correct answer:

a) The **smallest** odd prime number is ......3...... . (3 or 2 or 7 or 11)

b) The numbers **(1, 7, 14, 2)** are factors of ......14...... . (14 or 7 or 5 or 24)

c) The greatest common factor of **21** and **35** is ......7...... . (5 or 7 or 8 or 3)

2 Complete:

a) The number of factors of **9** is ......3...... .

b) The ......prime...... number has **two** factors only.

c) The greatest common factor of **7** and **5** is ......1...... .

3 Match:

a) The **smallest** even prime number is	6	1
b) The **greatest** common factor of 40 and 50 is	2	2
c) A factor of **24** is	10	3

4 A farm with 15 ducks and 25 chickens. Divide these birds into groups equal in number.

How many groups are there? How many ducks and chickens are in each group? Number of groups (GCF) = 5 groups

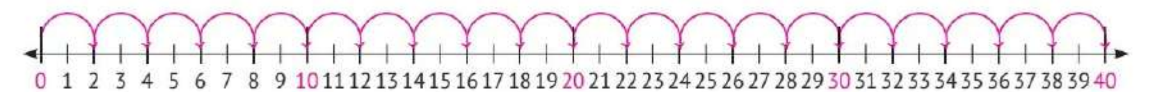
Ducks = 15 ÷ 5 = 3 ducks Chickens = 25 ÷ 5 = 5 chickens .

Concept 6.2 Understanding Multiples

Lessons 4–6 Identifying Multiples of Whole Numbers Common Multiples Relationships Between Factors and Multiples

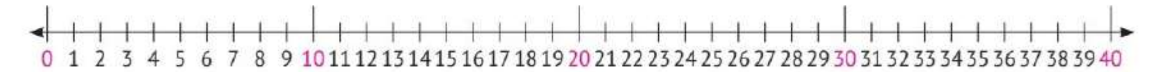
1 **Draw a line connecting each number to the other to show skip counting on the number line. Start from 0 each time:**

ⓐ Find the multiples of 2.



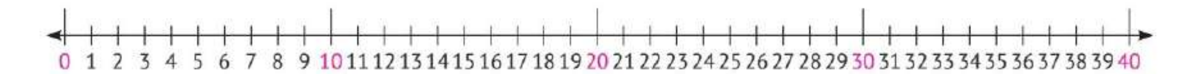
Multiples of 2 are: 0 , 2 , 4 , 6 , 8 , 10 , 12 , 14 , 16 , 18 , 20 , 22 , 24 , 26 , 28 , 30 , 32 , 34 , 36 , 38 , 40 .

ⓑ Find the multiples of 3.



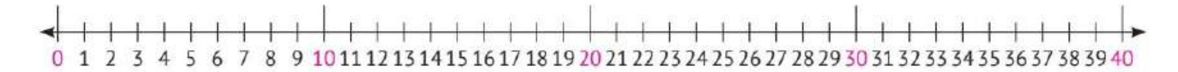
Multiples of 3 are: 0 , 3 , 6 , 9 , 12 , 15 , 18 , 21 , 24 , 27 , 30 , 33 , 36 , 39 .

ⓒ Find the multiples of 4.



Multiples of 4 are: 0 , 4 , 8 , 12 , 16 , 20 , 24 , 28 , 32 , 34, 38 .

ⓓ Find the multiples of 5.



Multiples of 5 are: 0 , 5 , 10 , 15 , 20 , 25 , 30 , 35 , 40 .

2 **Color the multiples using the following 100 Charts and skip counting:**

ⓐ The multiples of 2 are:

....

....

....

....

91	92	93	94	95	96	97	98	99	100
81	82	83	84	85	86	87	88	89	90
71	72	73	74	75	76	77	78	79	80
61	62	63	64	65	66	67	68	69	70
51	52	53	54	55	56	57	58	59	60
41	42	43	44	45	46	47	48	49	50
31	32	33	34	35	36	37	38	39	40
21	22	23	24	25	26	27	28	29	30
11	12	13	14	15	16	17	18	19	20
1	2	3	4	5	6	7	8	9	10

ⓑ The multiples of 3 are:

....

....

....

....

91	92	93	94	95	96	97	98	99	100
81	82	83	84	85	86	87	88	89	90
71	72	73	74	75	76	77	78	79	80
61	62	63	64	65	66	67	68	69	70
51	52	53	54	55	56	57	58	59	60
41	42	43	44	45	46	47	48	49	50
31	32	33	34	35	36	37	38	39	40
21	22	23	24	25	26	27	28	29	30
11	12	13	14	15	16	17	18	19	20
1	2	3	4	5	6	7	8	9	10

ⓒ The multiples of 4 are:

....

....

....

....

91	92	93	94	95	96	97	98	99	100
81	82	83	84	85	86	87	88	89	90
71	72	73	74	75	76	77	78	79	80
61	62	63	64	65	66	67	68	69	70
51	52	53	54	55	56	57	58	59	60
41	42	43	44	45	46	47	48	49	50
31	32	33	34	35	36	37	38	39	40
21	22	23	24	25	26	27	28	29	30
11	12	13	14	15	16	17	18	19	20
1	2	3	4	5	6	7	8	9	10

d The multiples of 5 are:

....

....

....

....

91	92	93	94	95	96	97	98	99	100
81	82	83	84	85	86	87	88	89	90
71	72	73	74	75	76	77	78	79	80
61	62	63	64	65	66	67	68	69	70
51	52	53	54	55	56	57	58	59	60
41	42	43	44	45	46	47	48	49	50
31	32	33	34	35	36	37	38	39	40
21	22	23	24	25	26	27	28	29	30
11	12	13	14	15	16	17	18	19	20
1	2	3	4	5	6	7	8	9	10

e The multiples of 6 are:

....

....

....

....

91	92	93	94	95	96	97	98	99	100
81	82	83	84	85	86	87	88	89	90
71	72	73	74	75	76	77	78	79	80
61	62	63	64	65	66	67	68	69	70
51	52	53	54	55	56	57	58	59	60
41	42	43	44	45	46	47	48	49	50
31	32	33	34	35	36	37	38	39	40
21	22	23	24	25	26	27	28	29	30
11	12	13	14	15	16	17	18	19	20
1	2	3	4	5	6	7	8	9	10

f The multiples of 7 are:

....

....

....

....

91	92	93	94	95	96	97	98	99	100
81	82	83	84	85	86	87	88	89	90
71	72	73	74	75	76	77	78	79	80
61	62	63	64	65	66	67	68	69	70
51	52	53	54	55	56	57	58	59	60
41	42	43	44	45	46	47	48	49	50
31	32	33	34	35	36	37	38	39	40
21	22	23	24	25	26	27	28	29	30
11	12	13	14	15	16	17	18	19	20
1	2	3	4	5	6	7	8	9	10

g The multiples of 8 are:

....

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....

91	92	93	94	95	96	97	98	99	100
81	82	83	84	85	86	87	88	89	90
71	72	73	74	75	76	77	78	79	80
61	62	63	64	65	66	67	68	69	70
51	52	53	54	55	56	57	58	59	60
41	42	43	44	45	46	47	48	49	50
31	32	33	34	35	36	37	38	39	40
21	22	23	24	25	26	27	28	29	30
11	12	13	14	15	16	17	18	19	20
1	2	3	4	5	6	7	8	9	10

h The multiples of 9 are:

....

....

....

....

91	92	93	94	95	96	97	98	99	100
81	82	83	84	85	86	87	88	89	90
71	72	73	74	75	76	77	78	79	80
61	62	63	64	65	66	67	68	69	70
51	52	53	54	55	56	57	58	59	60
41	42	43	44	45	46	47	48	49	50
31	32	33	34	35	36	37	38	39	40
21	22	23	24	25	26	27	28	29	30
11	12	13	14	15	16	17	18	19	20
1	2	3	4	5	6	7	8	9	10

3 **Find the multiples of each of 2 and 3, up to 20. Then find the common multiples between them:**

– The multiples of 2 are: **0 , 2 , 4 , 6 , 8 , 10 , 12 , 14 , 16 , 18 , 20** .

– The multiples of 3 are: **0 , 3 , 6 , 9 , 12 , 15 , 18** .

– The common multiples of the two numbers are: **0 , 6 , 12 , 18**

....

4 Find the multiples of each of 4 and 5, up to 40. Then find the common multiples between them:

- The multiples of 4 are: 0 , 4 , 8 , 12 , 16 , 20 , 24 , 28 , 32 , 36 , 40 .
- The multiples of 5 are: 0 , 5 , 10 , 15 , 20 , 25 , 30 , 35 , 40 .
- The common multiples of the two numbers are: 0 , 20 , 40 .

5 Find the multiples of each of 7 and 6, up to 90. Then find the common multiples between them:

- The multiples of 7 are: 0 , 7 , 14 , 21 , 28 , 35 , 42 , 49 , 56 , 63 , 70 , 77 , 84 .
- The multiples of 6 are: 0, 6 , 12 , 18 , 24 , 30 , 36 , 42 , 48 , 54 , 60 , 66 , 72 , 78 , 84 .
- The common multiples of the two numbers are: 0 , 42 , 84 .

6 Find the multiples of each of 4 and 6, up to 50. Then find the common multiples between them:

- The multiples of 4 are: 0 , 4 , 8 , 12 , 16 , 20 , 24 , 28 , 32 , 36 , 40 , 44 , 48 .
- The multiples of 6 are: 0 , 6 , 12 , 18 , 24 , 30 , 36 , 42 , 48 .
- The common multiples of the two numbers are: 0 , 12 , 24 , 36 , 48 .

7 Find the multiples of each of 2 and 5, up to 40. Then find the common multiples between them:

- The multiples of 2 are: 0, 2 , 4 , 6 , 8 , 10 , 12 , 14 , 16 , 18 , 20 , 22 , 24 , 26 , 28 , 30 , 32 , 34 , 36 , 38 , 40 .
- The multiples of 5 are: 0 , 5 , 10 , 15 , 20 , 25 , 30 , 35 , 40 .
- The common multiples of the two numbers are: 0 , 10 , 20 , 30 , 40 .

8 **Find the multiples of each of 6 and 8, up to 60. Then find the common multiples between them:**

- The multiples of 6 are: 0 , 6 , 12 , 18 , 24 , 30 , 36 , 42 , 48 , 54 , 60 .
- The multiples of 8 are: 0 , 8 , 16 , 24 , 32 , 40 , 48 , 56 .
- The common multiples of the two numbers are: 0 , 24 , 48 .

9 **Complete the following:**

a) Write 5 **multiples** of 8: (0 , 8 , 16 , 24 , 32)

b) Write 5 **multiples** of 9: (0 , 9 , 18 , 27 , 36)

c) Write 5 **multiples** of 7: (0 , 7 , 14 , 21 , 28)

d) Write two **common multiples** of 2 and 6: (6 , 12)

e) Write two **common multiples** of 4 and 9: (36 , 72)

f) Write two **common multiples** of 8 and 5: (40 , 80)

g) If 42 = 6 x 7, then 42 is a **multiple** of the two numbers 6 and 7 . Also, 6 and 7 are **factors** of the number 42 .

h) If 45 = 5 x 9 , then 45 is a **multiple** of the two numbers 5 and 9. Also, 5 and 9 are **factors** of the number 45 .

i) If 24 = 8 x 3, then 24 is a **multiple** of the two numbers 8 and 3. Also, 8 and 3 are **factors** of the number 24 .

j) An **even** number is a multiple of 2, 3, 4 and lies between 20 and 30. The number is 24 .

k) An **even** number is a multiple of 3, 5, 10 and lies between 20 and 40. The number is 30 .

l. An **odd** number is a multiple of 5 and 9, and it lies between 30 and 50. The number is ..... 45 ..... .

m. An **odd** number is a multiple of 3 and 7, and it lies between 20 and 30. The number is ..... 21 ..... .

n. The relationship between 2, 4, 8 is that ..... 8 is a multiple of 4 and 2. or 2 and 4 are factors of 8. .....

o. The relationship between 2, 5, 10 is that ..... 10 is a multiple of 2 and 5. or 2 and 5 are factors of 10. .....

p. The **common multiples** of 4 and 6 are:

0 , 12 , 24 , 36 , 48 , ... 60 ..... , ... 72 ..... , ... 84 ..... .

10 Choose the correct answer:

a. ..... 2 ..... is a **factor** of 8. (2 or 16 or 12 or 5)

b. ..... 16 ..... is a **multiple** of 8. (2 or 16 or 12 or 9)

c. ..... 12 ..... is a **common multiple** of 4 and 6. (12 or 16 or 18 or 30)

d. ..... 24 ..... is a **common multiple** of 8 and 3. (15 or 32 or 24 or 27)

e. If 4 X 5 = 20, then 20 is a ..... multiple ..... for 4 and 5.

(difference or multiple or factor or sum)

f. If 7 X 3 = 21, then 3 and 7 are **factors** of ..... 21 ..... .

(7 or 21 or 3 or 37)

g. ..... 24 ..... is a number that is a **multiple** of 2, 3, 4 and lies between 20 and 30. (24 or 26 or 28 or 45)

h. ..... 20 ..... is a number that is a **multiple** of 2, 4, 5 and lies between 10 and 30. (52 or 15 or 20 or 25)

i. ..... 15 ..... is an **odd** number that is a **multiple** of 3 and 5, and it lies between 10 and 30. (8 or 15 or 20 or 25)

j. ..... 0 ..... is a multiple of all numbers. (0 or 1 or 2 or 3)

Assessment 3 on Lessons 4–6

Unit 6

1 **Choose the correct answer:**

ⓐ Eight million, eighty **(In standard form)**: 8,000,080

(80,000,008 or 8,000,080 or 8,080,000 or 8,800,000)

ⓑ 12 is a **common multiple** of 3 and 4 . (5 or 4 or 9 or 7)

ⓒ A Millimeter is the best unit for measuring the **length** of an ant.

(centimeter or millimeter or meter or kilometer)

ⓓ 50 x 400 = 20,000 (4 or 40 or 400 or 4,000)

ⓔ 40 million x 100 = 4 milliard.

(400 million or 4 milliard or 40 milliard or 40 million)

2 **Complete the following:**

ⓐ The **place value** of the digit 9 in 59,258,156 is Millions.

ⓑ 45,568 + 54,432 = 100,000

ⓒ The number 45,985 rounded to the nearest 100 ≈ 46,000 .

ⓓ A square whose **perimeter** is 20 cm, its side length = 5 cm.

ⓔ A **common multiple** of the numbers 6, 8 and it lies between the numbers 20 and 30: (24).

3 **Find the multiples of each of 4 and 6, up to 30. Then find the common multiples between them:**

– The multiples of 4 are: 0 , 4 , 8 , 12 , 16 , 20 , 24 , 28 .

– The multiples of 6 are: 0 , 6 , 12 , 18 , 24 , 30 .

– The common multiples of the two numbers are:

0 , 12 , 24 .

4 **Shaimaa went to the club at 8:45 a.m. and came back at 10 a.m. How long has she been in the club?**

10 : 00 – 8 : 45 = 1 : 15.

Assessment on Concept 2

Unit 6

1 Choose the correct answer:

ⓐ The **common multiple** of all numbers is ......0...... . (1 or 9 or 4 or 0)

ⓑ All the following numbers are multiples of **3**, except ......17...... .

(17 or 24 or 18 or 9)

ⓒ **27** is a common multiple for **9** and ......3...... . (2 or 5 or 3 or 7)

2 Complete the following:

ⓐ **12** has ......6...... factors which are 1, 2, 3, 4, 6, 12 .

ⓑ ......8...... is a common multiple of **4** and **8.**

ⓒ ......36...... is a multiple of **9**, and between **30** and **40.**

3 Match:

ⓐ A multiple of **5** is — 40 [2]

ⓑ A factor of **16** is — 8 [3]

ⓒ The **common factor** of all numbers is — 1 [1]

4 Complete:

ⓐ **If** 4 X 6 = 24, **then**:

[1] **24** is a multiple of ......4...... and ......6...... .

[2] ......4...... and ......6...... are factors of ......24...... .

ⓑ If **30** is a multiple of **5** and **6**, then ......5...... X ......6...... = ...30...... .

ⓒ If **4** and **7** are factors of **28**, then ......4...... X ......7...... = ...28...... .

Assessment on Concept 1

Unit 6

Assessment on Concept 1

Unit 6

Assessment on Concept 1

Unit 6

Assessment on Concept 1

Unit 6

Assessment on Concept 1

Assessment on Concept 1

Unit 6

Concept 1.1 Multiplying by 1-Digit and 2-Digit Factors

Lesson 1 The Area Model Strategy

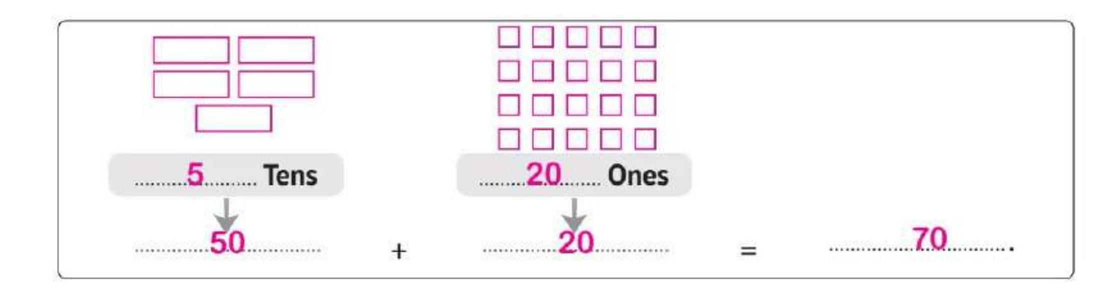
1 **Multiply using the Base Ten Blocks:**

ⓐ 35 X 3 = ...105......

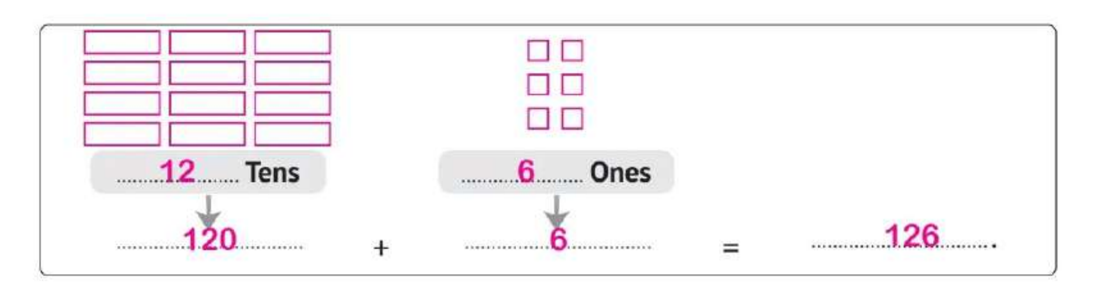
......9...... Tens ......15...... Ones

......90...... + ...15...... = ...105......

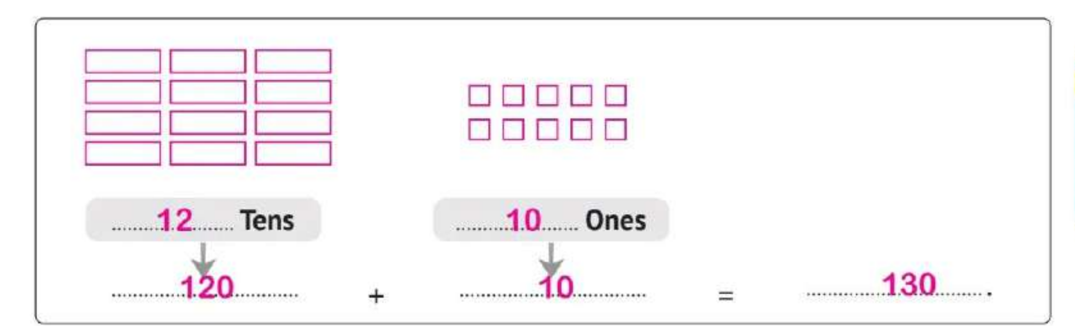
ⓑ 14 X 5 = ...70......



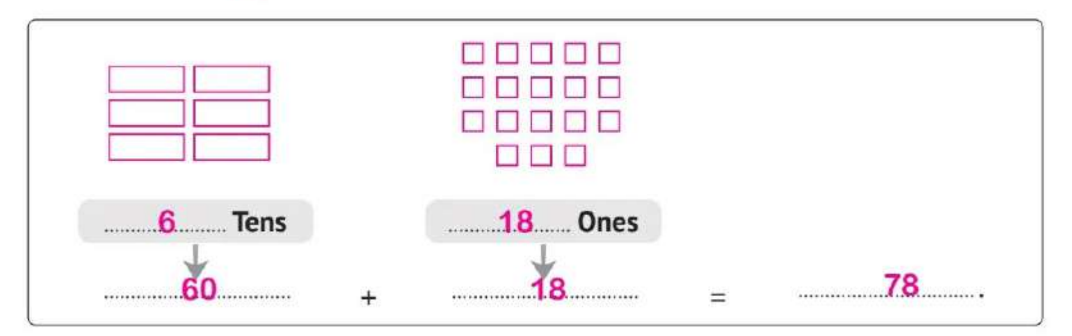
ⓒ 42 X 3 = ...126......



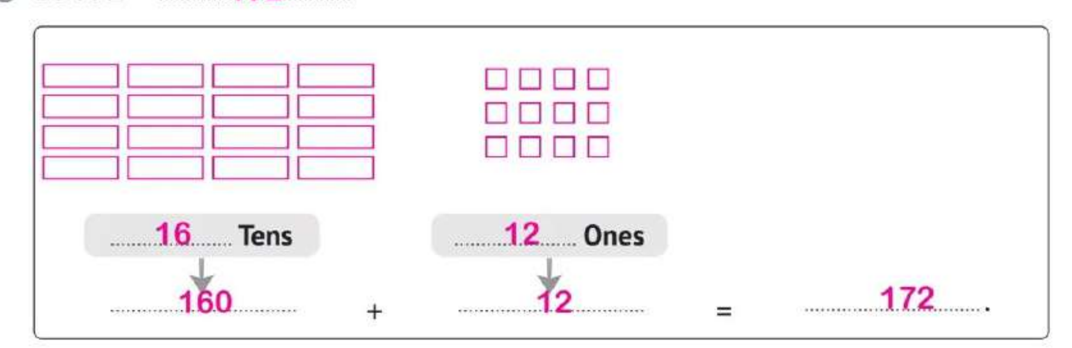
d 65 X 2 = 130



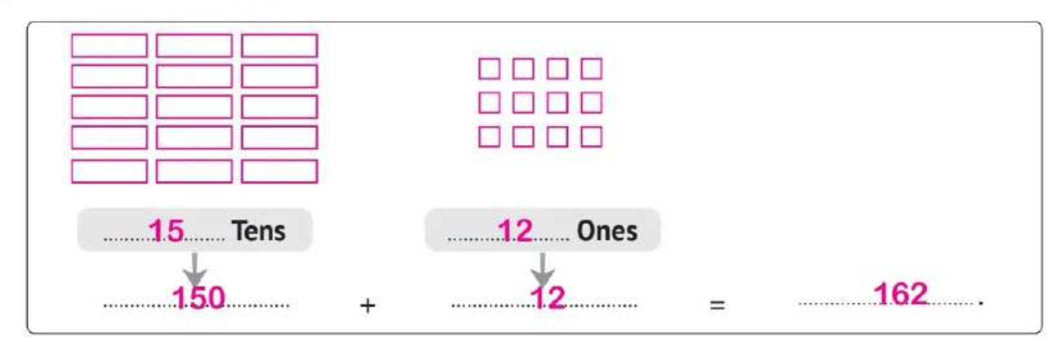
e 13 X 6 = 78



f 86 X 2 = 172



g 54 X 3 = 162



2 Use the rectangle area model to multiply:

ⓐ 82 X 6 = 492

	80	2
6	6 X 80 = 480	6 X 2 = 12

480 + 12 = 492

ⓑ 76 X 3 = 228

	70	6
3	3 X 70 = 210	3 X 6 = 18

210 + 18 = 228

ⓒ 63 X 8 = 504

	60	3
8	8 X 60 = 480	8 X 3 = 24

480 + 24 = 504

ⓓ 92 X 7 = 644

	90	2
7	7 X 90 = 630	7 X 2 = 14

630 + 14 = 644

ⓔ 19 X 8 = 152

	10	9
8	8 X 10 = 80	8 X 9 = 72

80 + 72 = 152

ⓕ 15 X 9 = 135

	10	5
9	9 X 10 = 90	9 X 5 = 45

90 + 45 = 135

ⓖ 57 X 3 = 171

	50	7
3	3 X 50 = 150	3 X 7 = 21

150 + 21 = 171

h 99 X 9 = 891

	90	9
9	9 X 90 = 810	9 X 9 = 81

810 + 81 = 891

i 36 X 5 = 180

	30	6
5	5 X 30 = 150	5 X 6 = 30

150 + 30 = 180

j 92 X 3 = 276

	90	2
3	3 X 90 = 270	3 X 2 = 6

270 + 6 = 276

3 **Each bus can accommodate 22 passengers at a time. What is the maximum number of passengers that the bus can carry in 5 trips?** **(Use the rectangle area model)**

22 X 5 = 110

	20	2
5	5 X 20 = 100	5 X 2 = 10

100 + 10 = 110 .

4 **The length of the bus route is 58 km. How many kilometers would the bus travel if it traveled this route 9 times a day?**

(Use the rectangle area model)

58 X 9 = 522

	50	8
9	9 X 50 = 450	9 X 8 = 72

450 + 72 = 522

5 **Hossam saves 85 pounds per month. How many pounds does Hossam save in 6 months?** **(Use the rectangle area model)**

85 X 6 = 510

	80	5
6	6 X 80 = 480	6 X 5 = 30

480 + 30 = 510

Assessment 1 on Lesson 1

Unit 7

1 Choose the correct answer:

ⓐ The **place value** of the digit 6 in 25,263,557 is Ten Thousands

(60,000 or Ten Thousands or 600,000 or Hundred Thousands)

ⓑ The **smallest odd** prime number is ......3...... . (1 or 2 or 3 or 5)

ⓒ If $5n = 50$, then $n =$ ......10...... . (250 or 10 or 0 or 5)

ⓓ 80 X 60 = ...48...... X 100 (86 or 80 or 48 or 4,800)

ⓔ 6 + 6 + 6 + 6 + 6 = 3 X ......10...... (30 or 5 or 6 or 10)

2 Complete the following:

ⓐ The **greatest common factor** of 12 and 18 is ......6...... .

ⓑ 8 X ......5,000...... = 40,000 ⓒ 9,000 – 2,458 = ...6,542......

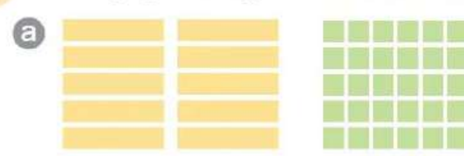
ⓓ 8,050,607 **(In expanded notation)**: ......

......8 X 1,000,000 + 5 X 10,000 + 6 X 100 + 7 X 1...... .

ⓔ To compare the numbers 36 and 9: 36 equals ..4 times.. the number 9.

3 Multiply using the Base Ten blocks:

ⓐ



..10.. Tens ..30.. Ones

..26.. X ..5.. = ..100.. + ..30..

= ..130..

ⓑ

..18.. Tens ..27.. Ones

..69.. X ..3.. = ..180.. + ..27..

= ..207..

4 Use the rectangle area model to multiply:

ⓐ

	80	9
7	7 X 80 = 560	7 X 9 = 63

..7.. X ..89.. = ..560.. + ..63..

= ..623..

ⓑ

	50	6
8	8 X 50 = 400	8 X 6 = 48

..8.. X ..56.. = ..400.. + ..48..

= ..448..

Lesson 2 The Distributive Property

Unit 7

1 Complete the following:

a) 4 X (8 + 9) = (4 X ....8....) + (4 x ....9....)

b) 9 X (....3.... + ...4....) = (9 X 3) + (9 X 4)

c) ....3.... X (6 + 5) = (3 X ....6....) + (3 X ....5....)

d) 6 X (3 + 4 + 5) = (....6.... X ....3....) + (....6.... X ....4....) + (....6.... X ....5....)

e) 6 X (200 + 90 + 3) = (....6.... X ..200..) + (....6.... X ..90..) + (....6.... X ....3....)

f) 6 X (....8.... + ...9.... + ...3....) = (....6.... X 8) + (....6.... X 9) + (....6.... X 3)

g) ....2.... X (..700.. + ..30.. + ...9....) = (2 X 700) + (2 X 30) + (2 X 9)

2 Use the Distributive Property to solve the following problems:

a) 4 X 31 = 4 X (....30.... + ...1....)

= (4 X ....30....) + (4 X ....1....)

= ....120.... + ...4.... = ...124....

b) 6 X 69 = ...6.... X (....60.... + ...9....)

= (....6.... X ....60....) + (....6.... X ....9....)

= ....360.... + ...54.... = ...414....

c) 6 X 485 = ...6.... X (....400.... + ...80.... + ...5....)

= (....6.... X ..400..) + (....6.... X ....80....) + (....6.... X ....5....)

= ..2,400.. + ...480.... + ...30.... = ..2,910..

ⓓ 8 X 276 = ...8... X (...200... + ...70... + ...6...)

= (...8... X ...200...) + (...8... X ...70...) + (...8... X ...6...)

= ...1,600... + ...560... + ...48... = ...2,208...

ⓔ 4 X 623 = ...4... X (...600... + ...20... + ...3...)

= (...4... X ...600...) + (...4... X ...20...) + (...4... X ...3...)

= ...2,400... + ...80... + ...12... = ...2,492...

ⓕ 3 X 2,564 = ...3... X (...2,000... + ...500... + ...60... + ...4...)

= (...3... X 2,000) + (...3... X 500) + (...3... X ...60...) + (...3... X ...4...)

= ...6,000... + ...1,500... + ...180... + ...12... = ...7,692...

ⓖ 6 X 4,893 = ...6... X (...4,000... + ...800... + ...90... + ...3...)

= (...6... X 4,000) + (...6... X 800) + (...6... X ...90...) + (...6... X ...3...)

= ...24,000... + ...4,800... + ...540... + ...18... = ...29,358...

ⓗ 7 X 3,892 = ...7... X (...3,000... + ...800... + ...90... + ...2...)

= (...7... X 3,000) + (...7... X 800) + (...7... X ...90...) + (...7... X ...2...)

= ...21,000... + ...5,600... + ...630... + ...14... = ...27,244...

ⓘ 6 X 3,060 = ...6... X (...3,000... + ...60...)

= (...6... X 3,000) + (...6... X ...60...)

= ...18,000... + ...360... = ...18,360...

ⓙ 3 X 8,005 = ...3... X (...8,000... + ...5...)

= (...3... X 8,000) + (...3... X ...5...)

= ...24,000... + ...15... = ...24,015...

3 Use the rectangle are model to solve the following problems:

ⓐ 8 X 125 = 1,000

	100	20	5
8	800	160	40

800 + 160 + 40 = 1,000

ⓑ 6 X 512 = 3,072

	500	10	2
6	3,000	60	12

3,000 + 60 + 12 = 3,072

ⓒ 9 X 629 = 5,661

	600	20	9
9	5,400	180	81

5,400 + 180 + 81 = 5,661

ⓓ 7 X 706 = 4,942

	700	6
7	4,900	42

4,900 + 42 = 4,942

ⓔ 5 X 2,365 = 11,825

	2,000	300	60	5
5	10,000	1,500	300	25

10,000 + 1,500 + 300 + 25 = 11,825

ⓕ 6 X 1,283 = 7,698

	1,000	200	80	3
6	6,000	1,200	480	18

6,000 + 1,200 + 480 + 18 = 7,698

ⓖ 9 X 1,822 = 16,398

	1,000	800	20	2
9	9,000	7,200	180	18

9,000 + 7,200 + 180 + 18 = 16,398

ⓗ 7 X 2,005 = 14,035

	2,000	5
7	14,000	35

14,000 + 35 = 14,035

4 The length of a bus is 1,280 centimeters.
How long are 3 buses? (Use the Distributive Property)

3 X (1,000 + 200 + 80)

= (3 X 1,000) + (3 X 200) + (3 X 80)

3,000 + 600 + 240 = 3,840

5 Hisham bought 7 kg of oranges, the price of one kilogram was 525 piasters. How much did Hisham pay for the oranges?
(Use the Distributive Property)

7 X (500 + 20 + 5) = (7 X 500) + (7 X 20) + (7 X 5)

3,500 + 140 + 35 = 3,675

6 The distance from Ali's house to the school is 930 meters, and the distance from his house to the club is 5 times the distance between his house and his school. What is the distance between Ali's house and the club?
(Use the rectangle area model)

Distance = 930 X 5

= 4,500 + 150 = 4,650

	900	30
5	4,500	150

7 Strips of cardboard in the form of rectangles are 185 cm long and 8 cm wide. Find the area of this cardboard.
(Use the rectangle area model)

Area = 185 X 8

= 800 + 640 + 40 = 1,480

	100	80	5
8	800	640	40

Assessment 2 on Lesson 2

Unit 7

1 Choose the correct answer:

ⓐ The equation that expresses "**n is equal to three times more than 8**" is $n = 3 \times 8$. ($n = 3 + 8$ or $n = 3 \times 8$ or $3 \times n = 8$ or $8 \times n = 24$)

ⓑ A square whose side length is 6 cm, its **area** is ...... 36 ...... cm^2. (12 or 30 or 24 or 36)

ⓒ 3 milliard, 30 million, 300 = 3,030,000,300 **(In standard form)** (330,300 or 3,000,030,300 or 3,030,000,300 or 3,030,300,000)

ⓓ 9 X 60 = 60 X 9 (*Commutative Property*) (Identity or Commutative or Associative or Distributive)

ⓔ 5 **Milliards** = ... 5,000 ...... **Millions** (5 or 50 or 500 or 5,000)

2 Complete the following:

ⓐ ...... 36 ...... is a **common multiple** of 4 and 6, and it lies between 30 and 40.

ⓑ 60 X ...... 500 ...... = 30,000

ⓒ 45 kilogram = ... 45,000 ...... grams

ⓓ The digit that represents **Ten Millions** in 6,453,289,170 is ...... 5 ....

ⓔ 6:45 + 2:55 = ... 9 ...... : ...... 40 ......

3 Use the Distributive Property to find:

ⓐ 9 X 96 = 9X (90 + 6)
= (9 X 90) + (9 X 6)
= 810 + 54 = 864

ⓑ 8 X 245 = 8 X (200 + 40 + 5)
= (8 X 200) + (8 X 40) + (8 X 5)
= 1,600 + 320 + 40 = 1960

4 Complete using the following rectangle area model:

	5,000	600	80	9
8	8 X 5,000 = 40,000	8 X 600 = 4,800	8 X 80 = 640	8 X 9 = 72

= 8 X 5,689 = 8 X (5,000 + 600 + 80 + 9)
= (8 X 5,000) + (8 X 600) + (8 X 80) + (8 X 9)
= 40,000 + 4,800 + 640 + 72 = 45,512

Lessons 3&4 The Partial Products Algorithm Multiplying by a 1-Digit Number

1 Complete the following:

a) 564 = 500 + 60 + ...4...

b) 500 + 60 + 4 = ...564...

c) 9,000 + 500 + 30 + 2 = ...9,532...

d) 6,000 + 400 + 80 + 3 = ...6,483...

e) 9,000 + 50 = ...9,050...

f) 6,000 + 600 = ...6,600...

g) 4,000 + 3 = ...4003...

h) 785 = ...700... + ...80... + ...5...

i) 927 = ...900... + ...20... + ...7...

j) 7,859 = ...7,000... + ...800... + ...50... + ...9...

k) 8,324 = ...8,000... + ...300... + ...20... + ...4...

l) 6,201 = ...6,000... + ...200... + ...1...

m) 309 = ...300... + ...9...

n) 9,006 = ...9,000... + ...6...

o) 8,200 = ...8,000... + ...200...

p) 3,010 = ...3,000... + ...10...

2 Use the partial products algorithm to multiply:

a) 3 X 452 = ...1,356...

	452	
X	3	
	1,200	(400 X 3)
+	150	(50 X 3)
+	6	(2 X 3)
	1,356	

b) 725 X 4 = ...2,900...

	725	
X	4	
	2,800	(700 X 4)
+	80	(20 X 4)
+	20	(5 X 4)
	2,900	

c) 6 X 218 = 1,308

```
        218
  X       6
  ---------
      1,200   ( 200 X 6 )
+        60   ( 10 X 6 )
+        48   ( 8 X 6 )
  ---------
      1,308
```

d) 936 X 8 = 7,488

```
        936
  X       8
  ---------
      7,200   ( 900 X 8 )
+       240   ( 30 X 8 )
+        48   ( 6 X 8 )
  ---------
      7,488
```

e) 3 X 1,254 = 3,762

```
      1,254
  X       3
  ---------
      3,000   ( 1,000 X 3 )
+       600   ( 200 X 3 )
+       150   ( 50 X 3 )
+        12   ( 4 X 3 )
  ---------
      3,762
```

f) 6,152 X 9 = 55,368

```
      6,152
  X       9
  ---------
     54,000   ( 6,000 X 9 )
+       900   ( 100 X 9 )
+       450   ( 50 X 9 )
+        18   ( 2 X 9 )
  ---------
     55,368
```

g) 3 X 2,908 = 8,724

```
      2,908
  X       3
  ---------
      6,000   ( 2,000 X 3 )
+     2,700   ( 900 X 3 )
+        24   ( 8 X 3 )
  ---------
      8,724
```

h) 6,028 X 6 = 36,168

```
      6,028
  X       6
  ---------
     36,000   ( 6,000 X 6 )
+       120   ( 20 X 6 )
+        48   ( 8 X 6 )
  ---------
     36,168
```

3 Use the standard multiplication algorithm to multiply:

(a) 35 × 8 = **280**	(b) 69 × 5 = **345**	(c) 53 × 3 = **159**
(d) 416 × 4 = **1,664**	(e) 835 × 6 = **5,010**	(f) 239 × 5 = **1,195**
(g) 1,496 × 7 = **10,472**	(h) 2,198 × 6 = **13,188**	(i) 5,123 × 8 = **40,984**
(j) 203 × 6 = **1,218**	(k) 1,207 × 3 = **3,621**	(l) 3,008 × 4 = **12,032**

4 **Complete the following table of the multiplication processes and then find the result using the given strategy:**

Problem	Product Estimation (Use Rounding)	Strategy
ⓐ 45 X 3 = 135	50 X 3 = 150	Base Ten Blocks 120 + 15 = 135
ⓑ 78 X 9 = 702	80 X 9 = 720	Rectangle Area Model 70, 8; 9: 630, 72 = 630 + 72 = 702
ⓒ 356 X 6 = 2,136	400 X 6 = 2,400	Distributive Property 6 X (300 + 50 + 6) (6 X 300) + (6 X 50) + (6 X 6) = 1800 + 300 + 36 = 2,136
ⓓ 3,406 X 8 = 27,248	3000 X 8 = 24,000	Partial Products Algorithm 3,406 8 24,000 (3,000 X 8) + 3,200 (400 X 8) + 48 (6 X 8) 27,248
ⓔ 8,014 X 5 = 40,070	8,000 X 5 = 40,000	Standard Multiplication Algorithm 8,014 X 5 40,070

5 **Complete using (< , = or >):**

ⓐ 9 X 26	>	4 X 56		ⓑ 4 X 250	=	8 X 125
ⓒ 431 X 4	<	624 X 6		ⓓ 5 X 294	=	6 X 245
ⓔ 25 X 80	>	205 X 8		ⓕ 30 X 300	<	3,012 X 3
ⓖ 752 X 2	<	7 X 525		ⓗ 365 X 8	<	600 X 50
ⓘ 8 X 2,500	=	40 X 500				

6 **Ahmed's family bought 6 kilograms of meat. If the price of one kilogram is 135 pounds, how many pounds did the family pay?**

135 X 6 = 810 pounds

7 **An electrical appliance merchant bought 8 television sets, the price of each set is 6,250 pounds.**
How much will the merchant pay for these television sets?

6,250 X 8 = 50,000 pounds

8 **The day is 24 hours, how many hours are there in a week?**

24 X 7 = 168 hours

Assessment 3 on Lessons 3&4

Unit 7

1 Choose the correct answer:

ⓐ A milliard is the **smallest** number consisting of ......10...... digits.
(7 or 9 or [10] or 11)

ⓑ 5 X (400 + 3 + 70) = 5 X ......473...... (400,370 or 437 or [473] or 374)

ⓒ 805 X ......4...... = 3,220 ([4] or 6 or 7 or 10)

ⓓ 5,000 + 20 + 3 = ...5,023...... (50,203 or 523 or [5,023] or 5,000,203)

ⓔ If $8 + \chi = 3 \times 8$, then χ = ...16...... . (3 or 8 or [16] or 12)

2 Complete the following:

ⓐ ......6...... is the **greatest common factor** of 12 and 18.

ⓑ 400 X ......40...... = 16,000

ⓒ Two weeks and three **days** = ...17...... **days**.

ⓓ The **place value** of the digit 6 in 53,106,720 is ......Thousands...... .

ⓔ 6 X (2 + 50 + 400) = (6 X ......2......) + (6 X ......50......) + (6 X ......400......)

3 Complete using (< , = or >):

ⓐ 5 X 502 (>) 5 X 205

ⓑ 45 m (=) 4,500 cm

ⓒ 20 X 50 (=) 8 X 125

ⓓ 456,258 + 543,742 (<) The **greatest** 7-digit number

ⓔ 5 **Millions** (>) 5,000 **Hundreds**

4 Arrange the following numbers in a descending order:

45,500,000 , 54,005,000 , 45,000,050 , 54,000,500

......54,005,000...... , ...54,000,500...... , ...45,500,000...... , ...45,000,050......

5 A train has 8 cars. If the number of seats in one car is 64, how many seats does the train have?

......64 X 8 = 512 seats......

Lesson 5 Multiplying a 2-Digit Number by a Multiple of 10

1 Find the product using the rectangle area model:

a) 82 X 20 = 1,640

	80	2
20	20 X 80 = 1,600	20 X 2 = 40

1,600 + 40 = 1,640

---

b) 30 X 25 = 750

	20	5
30	30 X 20 = 600	30 X 5 = 150

600 + 150 = 750

---

c) 38 X 60 = 2,280

	30	8
60	60 X 30 = 1,800	60 X 8 = 480

1,800 + 480 = 2,280

---

d) 90 X 38 = 3,420

	30	8
90	90 X 30 = 2,700	90 X 8 = 720

2,700 + 720 = 3,420

---

e) 60 X 96 = 5,760

	90	6
60	60 X 90 = 5,400	60 X 6 = 360

5,400 + 360 = 5,760

---

f) 37 X 40 = 1,480

	30	7
40	40 X 30 = 1,200	40 X 7 = 280

1,200 + 280 = 1,480

2 Use the rectangle area model to multiply:

ⓐ 83 X 90 = 7,470

	80	3
90	7,200	270

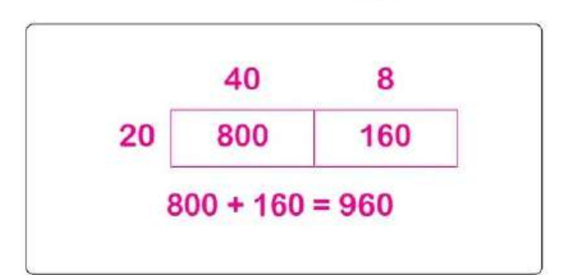
7,200 + 270 = 7,470

ⓑ 35 X 60 = 2,100

	30	5
60	1,800	300

1,800 + 300 = 2,100

ⓒ 48 X 20 = 960

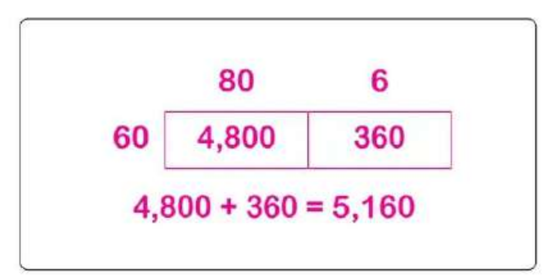


ⓓ 40 X 17 = 680

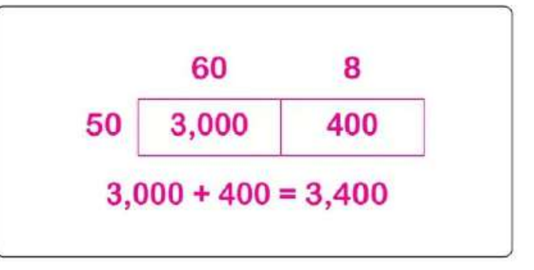
	10	7
40	400	280

400 + 280 = 680

ⓔ 60 X 86 = 5,160



ⓕ 68 X 50 = 3,400



3 Use the Distributive Property to solve the following problems:

ⓐ 90 X 15 = 90 X (10 + 5) = (90 X 10) + (90 X 5)

900 + 450 = 1,350 .

ⓑ 20 X 68 = 20 X (60 + 8) = (20 X 60) + (20 X 8)

1,200 + 160 = 1,360 .

ⓒ 80 X 29 = 80 X (20 + 9) = (80 X 20) + (80 X 9)

1,600 + 720 = 2,320 .

d) 60 X 63 = 60 X (60 + 3) = (60 X 60) + (60 X 3)

3,600 + 180 = 3,780.

e) 99 X 30 = 30 X (90 + 9) = (30 X 90) + (30 X 9)

2,700 + 270 = 2,970.

f) 88 X 50 = 50 X (80 + 8) = (50 X 80) + (50 X 8)

4,000 + 400 = 4,400.

4 Use the partial products algorithm to multiply:

a) 20 X 68 = 1,360

```
     68
x    20
  1,200   (60 X 20)
+   160   (8 X 20)
  1,360
```

b) 80 X 75 = 6,000

```
     75
x    80
  5,600   (70 X 80)
+   400   (5 X 80)
  6,000
```

c) 96 X 90 = 8,640

```
     96
x    90
  8,100   (90 X 90)
+   540   (6 X 90)
  8,640
```

d) 84 X 30 = 2,520

```
     84
x    30
  2,400   (80 X 30)
+   120   (4 X 30)
  2,520
```

e) 15 X 70 = 1,050

```
     15
x    70
    700   (10 X 70)
+   350   (5 X 70)
  1,050
```

f) 40 X 25 = 1,000

```
     25
x    40
    800   (20 X 40)
+   200   (5 X 40)
  1,000
```

5 **Find the product:**

ⓐ 12 X 60 = 720 ⓑ 80 X 14 = 1,120

ⓒ 40 X 25 = 1,000 ⓓ 90 X 42 = 3,780

ⓔ 80 X 55 = 4,400 ⓕ 30 X 96 = 2,880

ⓖ 95 X 60 = 5,700 ⓗ 80 X 45 = 3,600

6 **Emad bought 20 pens of the same type. If the price of one pen is 95 piasters, what is the amount of money that Emad paid?**

95 X 20 = 1,900 piasters

7 **A merchant has 35 boxes of fruits. If each box contains 20 kilograms, what is the mass of all boxes?**

20 X 35 = 700 kilograms

8 **Souad bought 20 meters of a piece of cloth. If the price of one meter is 65 pounds, what is the price of the whole piece of cloth?**

65 X 20 = 1,300 pounds

Assessment 4 on Lesson 5

Unit 7

1 Choose the correct answer:

ⓐ A square has a perimeter of 36 cm, then its **area** is ..... 81 ..... cm^2.

(24 or 9 or 12 or 81)

ⓑ ..... 70 ..... kg = 70,000 grams (7 or 70 or 700 or 7,000)

ⓒ 30 X ..... 120 ..... = 3,600 (120,000 or 12 or 120 or 1,200)

ⓓ The property used in: 8 X (3 + 7) = (8 X 3) + (8 X 7) is Distributive Property. (Identity or Commutative or Associative or Distributive)

ⓔ (8 **Hundreds** and 6 **Tens**) x 100 = ... 86,000 ..... .

(86,000 or 860,000 or 8,600 or 8,006,000)

2 Complete the following:

ⓐ ..... 59 ..... is a **prime** number that lies between 50 and 60, and its **Ones** digit is greater than its **Tens** digit.

ⓑ The factors of 21 are: ..... 1 ..... , ... 3 ..... , ... 7 ..... , ... 21 ..... .

ⓒ 60 X ..... 5,000 ..... = 300,000

ⓓ 8 + 8 + 8 + 8 + 8 = 5 X ..... 8 .....

ⓔ (6 X 1,000,000) + (3 X 10,000) + (4 X 100) + (3 X 1) = ... 6,030,403 .....

3 Find the result:

ⓐ 45,268 + 15,832 = ... 61,100 .....

ⓑ 80,600 − 25,087 = ... 55,513 .....

ⓒ 782 X 4 = ... 3,128 .....

ⓓ 90 X 15 = ... 1,350 .....

4 An apartment building has 20 floors. If each floor has 18 apartments, what is the total number of apartments in the building?

20 X 18 = 360 apartments

Assessment on Concept 1

Unit 7

1 Choose the correct answer:

ⓐ 60 X ....**4**........ = 240 (8 or 40 or 4 or 20)

ⓑ In the opposite model, χ = ...**7**........ .

(21 or 83 or 50 or 7)

	30	8
χ	210	56

ⓒ The price of one shirt is **58** LE, then the price of 5 shirts is ....**290**........ .

(290 or 150 or 300 or 200)

2 Complete:

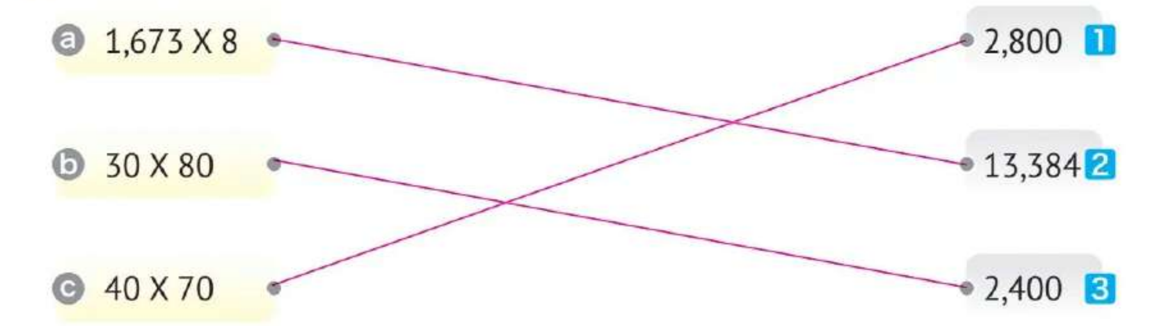
ⓐ 537 X 2 = ...**1,074**........

ⓑ A library with **5** shelves and each shelf contains **36** books, then the total number of books = **36 X 5 = 180**.

ⓒ In the opposite bar model, c = ...**3,600**........ .

	40	6
90	c	540

3 Match:



Concept 7.2 Dividing by 1-Digit Divisors

Lessons 6&7 Exploring Remainders Patterns in Division

1 Complete the following table:

Problem	Dividend	Divisor	Quotient	Remainder
a 8 ÷ 4	8	4	2	0
b 9 ÷ 2	9	2	4	1
c 15 ÷ 5	15	5	3	0
d 28 ÷ 4	28	4	7	0
e 36 ÷ 6	36	6	6	0
f 35 ÷ 8	35	8	4	3
g 25 ÷ 4	25	4	6	1
h 31 ÷ 5	31	5	6	1
i 42 ÷ 8	42	8	5	2
j 48 ÷ 6	48	6	8	0

2 Find the quotient of:

a 90 ÷ 3 = 30

b 64,000 ÷ 8 = 8,000

c 600 ÷ 2 = 300

d 27,000 ÷ 9 = 3,000

e 450 ÷ 5 = 90

f 400,000 ÷ 5 = 80,000

g 1,800 ÷ 5 = 360

h 540,000 ÷ 6 = 90,000

i 2,400 ÷ 6 = 400

j 3,500,000 ÷ 5 = 700,000

3 Complete the following table:

Equation	Related Fact	Quotient
a 400 ÷ 4	4 ÷ 4 = 1	100
b 8,000 ÷ 2	8 ÷ 2 = 4	4,000
c 90,000 ÷ 3	9 ÷ 3 = 3	30,000
d 420 ÷ 7	42 ÷ 7 = 6	60
e 350 ÷ 5	35 ÷ 5 = 7	70
f 3,600 ÷ 4	36 ÷ 4 = 9	900
g 27,000 ÷ 9	27 ÷ 9 = 3	3,000
h 240,000 ÷ 8	24 ÷ 8 = 3	30,000
i 60,000 ÷ 3	6 ÷ 3 = 2	20,000
j 18,000 ÷ 6	18 ÷ 6 = 3	3,000

4 Complete using (< , = or >):

a 450 ÷ 5 > 350 ÷ 7

b 4,000 ÷ 5 > 2,000 ÷ 5

c 1,000 ÷ 2 > 400 ÷ 4

d 20,000 ÷ 4 = 30,000 ÷ 6

e 20,000 ÷ 5 > 24,000 ÷ 8

f 8,100 ÷ 9 > 450 ÷ 5

g 1,500 ÷ 3 > 2,400 ÷ 6

h 4,800 ÷ 6 < 64,000 ÷ 8

i 400 ÷ 8 < 300 ÷ 5

j 2,500 ÷ 5 < 45,000 ÷ 9

5 Complete the following:

a If 5 X 8 = 40, then 4,000 ÷ 5 = 800 .

b If 6 X 7 = 42, then 42,000 ÷ 6 = 7,000 .

c If 3 X 4 = 12, then 120 ÷ 3 = 40 .

d If 2 X 9 = 18, then 180,000 ÷ 9= 20,000 .

e If 5 X 4 = 20, then 20,000 ÷ 4 = 5,000 .

6 Saleem brought 15 pancakes to give to four of his friends.
How can Saleem divide the pancakes evenly?

15 ÷ 4 = 3 R 3

7 A teacher has 21 candy bars and wants to distribute them equally among 5 students.
How many candy bars will each student get?

21 ÷ 5 = 4 R 1

8 32 people would like to attend a special event in Zamalek District. There are several different ways to go to this event. Participants can only choose one way to allow the whole group to go. Look at the means of transportation in the following table that they can use.

Means of Transportation	Number of People Allowed in Each Means of Transportation	Problem	Number of People Left
a Microbus	9	32 ÷ 9 = 3	5
b Tuk Tuk	3	32 ÷ 3 = 10	2
c Car	4	32 ÷ 4 = 8	0
d Van	7	32 ÷ 7 = 4	4

9 Essam wants to put 52 cups in boxes and ship them.
Each box can hold 6 cups.
How many boxes are needed to ship the cups?

52 ÷ 6 = 8 R 4 , 9 boxes are needed

10 Ahmed distributed 12,000 pounds equally among his three sons.
What is the share for each son?

12,000 ÷ 3 = 4,000 pounds

11 Emad spent 24,000 equally within six days.
How many pounds did Emad spend in one day?

24,000 ÷ 6 = 4,000 pounds

Assessment 5 on Lessons 6&7

Unit 7

1 Choose the correct answer:

ⓐ If 8 X 3 = 24, then 2,400 ÷ 8 = **300** . (3 or 30 or 300 or 3,000)

ⓑ 3,200 ÷ 4 **<** 8,000 ÷ 8 (> or = or < or ≥)

ⓒ 3,200 ÷ **8** = 400 (8 or 80 or 800 or 8,000)

ⓓ 8 **kg** and 45 **grams** = **8,045** **grams**. (80,450 or 8,045 or 8,450 or 845)

ⓔ 5,000 **Tens** = **50** **Thousands**. (5 or 50 or 500 or 5,000)

2 Complete the following:

ⓐ The perimeter of a square is 12 cm, then its **area** is **9** cm^2.

ⓑ 4,256 = **4,000** + **200** + **50** + **6** . **(In expanded form)**

ⓒ The **factors** of 28 are: **1** , **2** , **4** , **7** , **14** , **28** .

ⓓ The **remainder** of 32 ÷ 6 is **2** .

ⓔ If 8 X 4 = 32, then 32,000 ÷ 8 = **4,000** .

3 Complete the following table:

Problem	Dividend	Divisor	Quotient	Remainder
ⓐ 45 ÷ 6	45	6	7	3
ⓑ 32 ÷ 8	32	8	4	0
ⓒ 14 ÷ 2	14	2	7	0
ⓓ 23 ÷ 5	23	5	4	3
ⓔ 68 ÷ 8	68	8	8	4

4 A school has 240 students divided into 8 classes equally. How many students are there in each class?

240 ÷ 8 = 30 students

Lesson 8 The Area Model and Division

1 Find the quotient in each of the following:

(Use the rectangle area model)

ⓐ 70 ÷ 5

5 | 5 X 10 = 50 | 5 X 4 = 20

10 | 4

70 - 50 = 20 , 20 - 20 = 0

70 ÷ 5 = 14

ⓑ 64 ÷ 4

4 | 4 X 10 = 40 | 4 X 6 = 24

10 | 6

64 - 40 = 24 , 24 - 24 = 0

64 ÷ 4 = 16

ⓒ 98 ÷ 2

2 | 2 X 40 = 80 | 2 X 9 = 18

40 | 9

98 - 80 = 18 , 18 - 18 = 0

98 ÷ 2 = 49

ⓓ 56 ÷ 3

3 | 3 X 10 = 30 | 3 X 8 = 24

10 | 8

56 - 30 = 26 , 26 - 24 = 2

56 ÷ 3 = 18 R 2

ⓔ 76 ÷ 6

6 | 6 X 10 = 60 | 6 X 2 = 12

10 | 2

76 - 60 = 16 , 16 - 12 = 4

76 ÷ 6 = 12 R 4

ⓕ 68 ÷ 5

5 | 5 X 10 = 50 | 5 X 3 = 15

10 | 3

68 - 50 = 18 , 18 - 15 = 3

68 ÷ 5 = 13 R 3

ⓖ 587 ÷ 4 = 146 R 3

587 - 400 = 187 , 187 - 160 = 27

27 - 24 = 3

4	4 X 100 = 400	4 X 40 = 160	4 X 6 = 24
	100	40	6

ⓗ 876 ÷ 6 = 146

876 - 600 = 276 , 276 - 240 = 36

36 - 36 = 0

6	6 X 100 = 600	6 X 40 = 240	6 X 6 = 36
	100	40	6

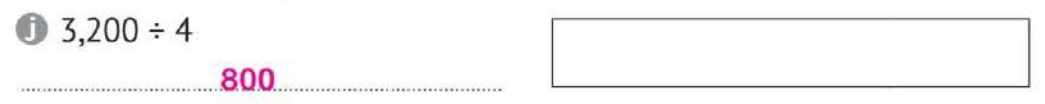
ⓘ 615 ÷ 5 = 123

615 - 500 = 115 , 115 - 100 = 15

15 - 15 = 0

	100	20	3
5	5 X 100 = 500	5 X 20 = 100	5 X 3 = 15

ⓙ 3,200 ÷ 4



800

ⓚ 360 ÷ 4

90

2 Use the rectangle area model to solve the following, show your steps:

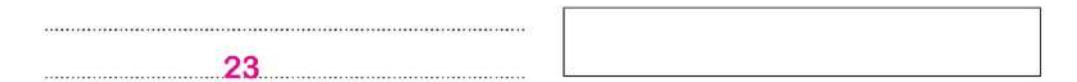
ⓐ An organization donated 89 books to a school. The books will be divided among 6 classes. How many books will each class get?

14 R 5

ⓑ Rashida saved 545 pounds to buy a car. She was saving 5 pounds every day she worked. How many days did she have to work to save enough money to buy the car?

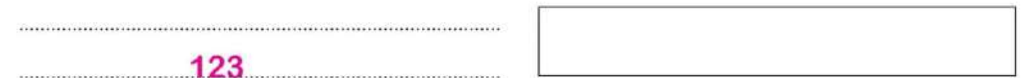
109

ⓒ Amir bought a book of stickers. The book contains 92 stickers. Amir wanted to give the stickers to 4 of his friends.
How many stickers will each of his friends get?



23

ⓓ There are 492 cars that need to use the stadium parking lot. The stadium contains 4 parking lots. Each parking lot must contain the same number of cars evenly. How many cars are there in each parking lot?



123

Assessment 6 on Lesson 8

Unit 7

1 Choose the correct answer:

a) The **Additive Identity Element** is ....0.... . (0 or 1 or 2 or 3)

b) The **smallest odd** prime number is ....3.... . (0 or 1 or 2 or 3)

c) The **value** of the digit 5 in 95,027,364

is ....5,000,000.... . (5,000,000 or 500,000 or 40,000 or 5,000)

d) 4 **liters and** 15 **milliliters** = ..4,015.. **milliliters.**

(4,150 or 4,015 or 40,015 or 415)

e) 80 X ....20.... = 1,600 (2 or 20 or 200 or 2,000)

2 Complete the following:

a) The **factors** of 16 are: ...1... , ...2... , ...4... , ...8... , ...16... .

b) The **place value** of the digit 6 in 256,125,334 is ..Millions.. .

c) One **week** and two **days** = ...9.... **days**.

d) ....30.... is a **common multiple** of 6 and 10, and it lies between 20 and 40.

e) 9 million, twenty-five thousand, three **(In standard form)**: ....9,025,003.

3 Find the quotient and complete the rectangle area model:

a) 76 ÷ 4

4	4 X 10 = 40	4 X 9 = 36
	10	9

76 - 40 = 36

36 - 36 = 0

76 ÷ 4 = ...19....

b) 144 ÷ 6

6	6 X 20 = 120	6 X 4 = 24
	20	4

144 - 120 = 24

24 - 24 = 0

144 ÷ 6 = ...24....

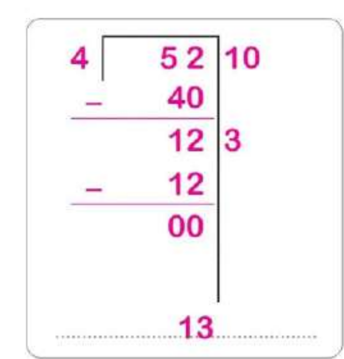
4 Salma wants to divide 85 candy bars among 5 of her friends equally. How many candy bars will each friend get?

85 ÷ 5 = 17 candy bars

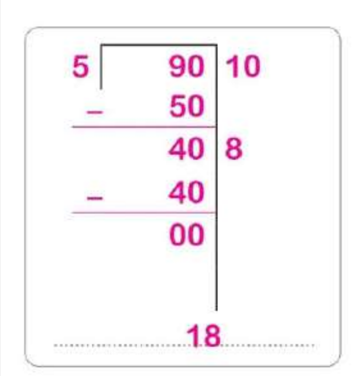
Lesson 9 The Partial Quotients Algorithm

1 Use the partial quotients algorithm to divide:

ⓐ 52 ÷ 4



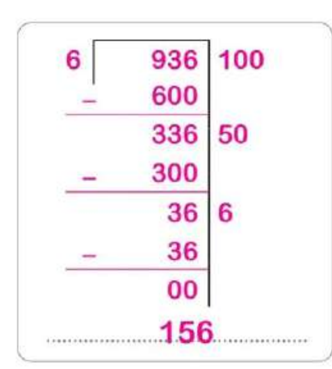
ⓑ 90 ÷ 5



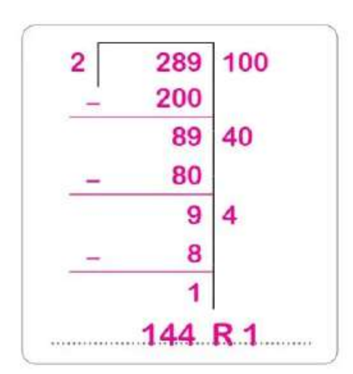
ⓒ 92 ÷ 8

8 | 92 | 10
– 80
12 | 1
– 8
4
11 R 4

ⓓ 936 ÷ 6



ⓔ 289 ÷ 2



ⓕ 825 ÷ 3

3 | 825 | 200
– 600
225 | 70
– 210
15 | 5
– 15
00
275

ⓖ 6,456 ÷ 4 **= 1,614**

4 | 6,456 | 1,000
– 4,000
2,456 | 600
– 2,400
56 | 10
– 40
16 | 4
– 16
00

ⓗ 3,585 ÷ 5

5 | 3,585 | 700
– 3,500
85 | 10
– 50
35 | 7
– 35
00
717

ⓘ 9,508 ÷ 7 **= 1,358 R2**

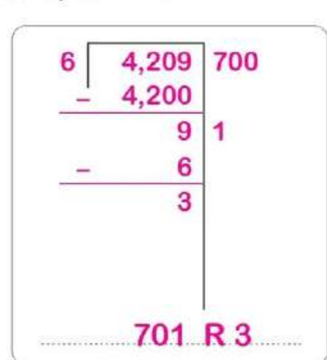
7 | 9,508 | 1,000
– 7,000
2,508 | 300
– 2,100
408 | 50
– 350
58 | 8
– 56
2

j 2,535 ÷ 5

5 | 2,535 | 500
− 2,500
35 | 7
− 35
00

507

k 4,209 ÷ 6



l 8,407 ÷ 7

7 | 8,407 | 1,000
− 7,000
1,407 | 200
− 1,400
7 | 1
− 7
0

1,201

2 Write the division problem that matches each rectangle area model. Then solve the problem using the partial quotients algorithm:

a

Rectangle Area Model

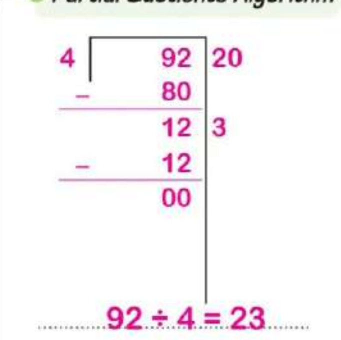
4	4 X 20 = 80	4 X 3 = 12
	20	3

92 - 80 = 12 , 12 - 12 = 0

Division Problem

92 ÷ 4 = 23

Partial Quotients Algorithm



92 ÷ 4 = 23

b

Rectangle Area Model

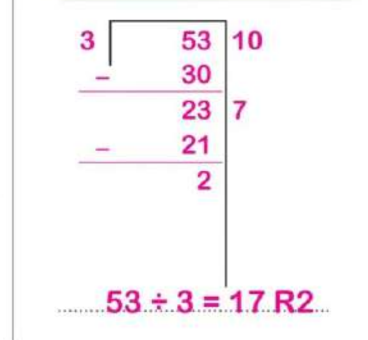
3	3 X 10 = 30	3 X 7 = 21
	10	7

The remainder is 2.

Division Problem

53 ÷ 3 = 17 R2

Partial Quotients Algorithm



53 ÷ 3 = 17 R2

Unit 7

c

Rectangle Area Model:

6	6 X 100 = 600	6 X 40 = 240	6 X 3 = 18
	100	40	3

858 - 600 = 258 , 258 - 240 = 18
18 - 18 = 0

Division Problem:

858 ÷ 6 = 143

Partial Quotients Algorithm

```
6 | 858 | 100
  - 600 |
    258 | 40
  - 240 |
     18 | 3
  -  18 |
     00 |
```

858 ÷ 6 = 143

d

Rectangle Area Model

5	5 X 100 = 500	5 X 30 = 150	5 X 7 = 35
	100	30	7

The remainder is 3.

Division Problem

688 ÷ 5 = 137 R3

Partial Quotients Algorithm

```
5 | 688 | 100
  - 500 |
    188 | 30
  - 150 |
     38 | 7
  -  35 |
      3 |
```

688 ÷ 5 = 137 R3

e

Rectangle Area Model

6	6 X 400 = 2,400	6 X 60 = 360	6 X 7 = 42
	400	60	7

2,802 - 2,400 = 402 402 - 360 = 42
42 - 42 = 0

Division Problem

2,802 ÷ 6 = 467

Partial Quotients Algorithm

```
6 | 2,802 | 400
  - 2,400 |
      402 | 60
    - 360 |
       42 | 7
    -  42 |
       00 |
```

2,802 ÷ 6 = 467

3 A piece of land in the form of a rectangle has an area of 96 square meters. If its width is 8 meters, find its length.

(Use the partial quotients algorithm)

Length = 96 ÷ 8

= 12 m

8	96	10
–	80	
	16	2
–	16	
	00	

4 Eman wants to distribute 1,548 among 6 persons equally.
What is the share of each person?
(Use the partial quotients algorithm)

Share of each person = 1,548 ÷ 6

= 258 LE

6	1,548	200
–	1,200	
	348	50
–	300	
	48	8
–	48	
	00	

5 A tourism company has prepared 5 buses to transport 175 tourists to visit the Pyramids area.
How many tourists will be in each bus?

(Use the partial quotients algorithm)

The number of tourists = 175 ÷ 5

= 35 tourists.

5	175	30
–	150	
	25	5
–	25	
	00	

Assessment 7 on Lesson 9

Unit 7

1 Choose the correct answer:

ⓐ If the **place value** of the digit 5 is the **Ten Thousands**, then its **value** is ...... 50,000 .... (50 or 500 or 50,000 or 50,000,000)

ⓑ 2,400 ÷ 4 ...... > ...... 3,000 ÷ 6 (> or = or < or ≥)

ⓒ If 5***a*** = 45, then ***a*** = ... 9 .... (4 or 45 or 9 or 40)

ⓓ The best unit for measuring the **length** of an insect is ...... millimeter ....
(decimeters or meters or centimeters or millimeters)

ⓔ 8 X 500 = 4 X ...... 1,000 ...... (10 or 100 or 1,000 or 10,000)

2 Complete the following:

ⓐ The area of a square is 25 cm², then its **perimeter** is ...... 20 ...... cm.

ⓑ 45 + 99 = ... 44 ...... + 100

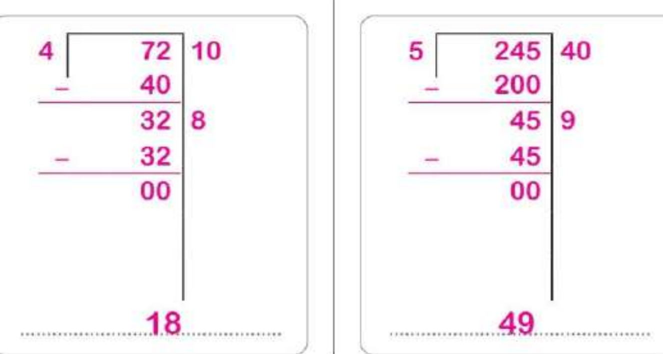
ⓒ The **remainder** of 93 ÷ 6 is ...... 3 ....

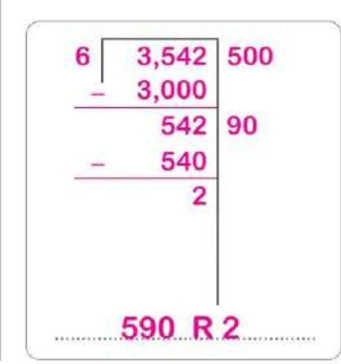
ⓓ The **GCF** of 12 and 18 is ...... 6 ....

ⓔ (5 X 6) + (5 X 20) + (40 X 6) + (40 X 20) = 45 X ...... 26 ......

3 Use the partial quotients algorithm to divide:

ⓐ 72 ÷ 4 ⓑ 245 ÷ 5 ⓒ 3,542 ÷ 6





4 There are 72 students at the playground and we need to divide them into 6 teams. How many students will be in each team?

...... 72 ÷ 6 = 12 students ......

Lessons 10&11 The Standard Division Algorithm – Division and Multiplication

1 Complete the following table:

	Problem	The dividend is between	The quotient is between
a	64 ÷ 2	60 and 80	30 and 40
b	87 ÷ 3	60 and 90	20 and 30
c	124 ÷ 4	120 and 160	30 and 40
d	105 ÷ 5	100 and 150	20 and 30
e	324 ÷ 3	300 and 600	100 and 200
f	864 ÷ 7	700 and 1,400	100 and 200
g	2,472 ÷ 6	2400 and 3,000	400 and 500
h	3,648 ÷ 8	3200 and 4,000	400 and 500
i	9,245 ÷ 5	5,000 and 10,000	1,000 and 2,000
j	7,206 ÷ 3	6,000 and 9,000	2,000 and 3,000

2 Divide using the standard division algorithm:

a) 65 ÷ 5 = 13

```
      13
 5 | 65
   - 50
     15
   - 15
     00
```

b) 96 ÷ 6 = 16

```
      16
 6 | 96
   - 60
     36
   - 36
     00
```

c) 94 ÷ 4 = 23 R2

```
      23
 4 | 94
   - 80
     14
   - 12
      2
```

d 136 ÷ 4 = 34

```
      34
4 | 136
  - 120
     16
  -  16
     00
```

e 225 ÷ 3 = 75

```
      75
3 | 225
  - 210
     15
  -  15
     00
```

f 248 ÷ 5 = 49 R3

```
      49
5 | 248
  - 200
     48
  -  45
      3
```

g 828 ÷ 6 = 138

```
     138
6 | 828
  - 600
    228
  - 180
     48
  -  48
     00
```

h 744 ÷ 3 = 248

```
     248
3 | 744
  - 600
    144
  - 120
     24
  -  24
     00
```

i 954 ÷ 7 = 136 R2

```
     136
7 | 954
  - 700
    254
  - 210
     44
  -  42
      2
```

j 1,256 ÷ 8 = 157

```
       157
8 | 1,256
  -   800
      456
  -   400
       56
  -    56
       00
```

k 2,236 ÷ 9 = 248 R 4

```
       248
9 | 2,236
  - 1,800
      436
  -   360
       76
  -    72
        4
```

l 4,025 ÷ 5 = 805

```
       805
5 | 4,025
  - 4,000
     0025
  -    25
       00
```

m 9,756 ÷ 2 = 4,878

n 4,254 ÷ 6 = 709

o 9,024 ÷ 3 = 3,008

3 Complete the following table:

	Problem	The Quotient is between	Number of Digits of the Quotient	Using the Standard Division Algorithm
a	68 ÷ 4 = 17	10 and 20	2	17
b	135 ÷ 5 = 27	20 and 30	2	27
c	868 ÷ 7 = 124	100 and 200	3	124
d	3,570 ÷ 5 = 714	700 and 800	3	714
e	9,827 ÷ 3 = 3,275 R 2	3,000 and 4,000	4	3,275 R 2

4 A train has 784 passenger seats. If the train has 7 cars and each car has the same number of seats. How many passengers can be seated in each car?

(Solve the problem using at least two different strategies)

First Strategy

```
7 | 784 | 100
  – 700 |
  -----
     84 | 10
  –  70 |
  -----
     14 | 2
  –  14 |
  -----
     00 |
```

Second Strategy

```
      112
   ------
7 |  784
-    700
  -------
      84
-     70
  -------
      14
-     14
  -------
      00
```

784 ÷ 7 = 112 passengers

784 ÷ 7 = 112 passengers

5 There are 567 books in a library; they are distributed over 3 cupboards. How many books are there in each cupboard?

(Solve the problem using at least two different strategies)

First Strategy

```
3 | 567 | 100
  – 300 |
  -----
    267 | 80
  – 240 |
  -----
     27 | 9
  –  27 |
  -----
     00 |
```

Second Strategy

```
      189
   ------
3 |  567
-    300
  -------
     267
-    240
  -------
      27
-     27
  -------
      00
```

567 ÷ 3 = 189 books

567 ÷ 3 = 189 books

6 A school has 144 boys and 216 girls. They are divided into 8 classes equally. How many students are there in each class?

144 + 216 = 360 , 360 ÷ 8 = 45 students

Assessment 8 on Lessons 10 & 11

Unit 7

1 Choose the correct answer:

a) 49,286 ≈ ..... 50,000 ..... . (To the nearest Ten Thousand)
(5,000 or [50,000] or 49,000 or 40,000)

b) 45 ÷ 3 ..... > ..... 56 ÷ 4
([>] or = or < or ≥)

c) The **value** of the digit **5** in the **Ten Thousands** place = ... 1,000 ..... times the **value** of the digit **5** in the **Tens** place. (10 or 100 or [1,000] or 10,000)

d) 245 + 110 = ... 110 ..... + 245
(135 or [110] or 245 or 355)

e) 45,000 ÷ ..... 5 ..... = 9,000
(5,000 or 500 or 50 or [5])

2 Complete the following:

a) 200 **minutes** = 3 **hours** and ..... 20 ..... **minutes**.

b) 9 X 300 = ... 27 ..... X 100

c) 9,456 – 2,367 = ... 7,089 .....

d) The prime number that comes **after** 19 is ..... 23 ..... .

e) (45 X 5) + (45 X 60) = 45 X ..... 65 ..... .

3 Divide using the standard division algorithm:

a) 92 ÷ 4 = ... 23 .....

```
      23
   ┌────
 4 │ 92
  – 80
   ────
    12
  – 12
   ────
    00
```

b) 340 ÷ 5 = ... 68 .....

```
      68
   ┌─────
 5 │ 340
  – 300
   ─────
     40
  –  40
   ─────
     00
```

c) 8,491 ÷ 7 = ... 1,213 .....

```
     1,213
   ┌───────
 7 │ 8,491
  – 7,000
   ───────
    1,491
  – 1,400
   ───────
       91
  –    70
   ───────
       21
  –    21
   ───────
       00
```

4 A hotel consists of 215 rooms distributed equally among 5 floors. How many rooms are there on each floor?

215 ÷ 5 = 43 rooms

Assessment on Concept 2

1 Choose the correct answer:

ⓐ The remainder of **37 ÷ 5** is ..... 2 ..... . (4 or 3 or 1 or 2)

ⓑ The quotient of **834 ÷ 3** is ..... 278 ..... . (281 or 280 or 812 or 278)

ⓒ In the opposite operation, the quotient is ..... 39 ..... . (4 or 157 or 39 or 1)

$$\begin{array}{r|l} & 39 \\ \hline 4 & 157 \\ & -12 \\ \hline & 37 \\ & -36 \\ \hline & 1 \end{array}$$

2 Complete:

ⓐ Adam wants to distribute **60** balloons equally among **12** children. Each child will get ..... 5 ..... balloons.

ⓑ If **420 ÷ 7 = 60**, then the dividend is ..... 420 ..... and the divisor is ..... 7 ..... .

ⓒ 8,100 ÷ 9 = ... 900 .....

3 Match:

ⓐ 550 ÷ 5 = ... — 2 (110)

ⓑ The remainder of 61 ÷ 7 is — 3 (5)

ⓒ 320 ÷ 4 = ... — 1 (80)

1. 80
2. 110
3. 5

Unit 8 Order of Operations

Concept 8.1 Order of Operations

Lessons 1&2 The Order of Operations and Story Problems

1 Follow the order of operations to solve the following problems:

a) $15 + 5 + 7 = 20 + 7$ $= 27$	b) $9 + 11 + 16 = 20 + 16$ $= 36$
c) $9 - 6 - 3 = 3 - 3$ $= 0$	d) $12 - 2 - 5 = 10 - 5$ $= 5$
e) $8 + 7 - 10 = 15 - 10$ $= 5$	f) $9 + 8 - 7 = 17 - 7$ $= 10$
g) $7 + 9 - 6 = 16 - 6$ $= 10$	h) $24 - 5 + 3 = 19 + 3$ $= 22$
i) $15 - 7 + 2 = 8 + 2$ $= 10$	j) $21 - 9 + 11 = 12 + 11$ $= 23$
k) $5 \times 2 \times 9 = 10 \times 9$ $= 90$	l) $8 \times 5 \times 6 = 40 \times 6$ $= 240$
m) $45 \div 5 \div 3 = 9 \div 3$ $= 3$	n) $63 \div 9 \div 7 = 7 \div 7$ $= 1$

o $5 \times 8 \div 4 = 40 \div 4$ $= 10$	**p** $6 \times 6 \div 9 = 36 \div 9$ $= 4$
q $5 \times 2 \div 5 = 10 \div 5$ $= 2$	**r** $48 \div 8 \times 5 = 6 \times 5$ $= 30$
s $72 \div 9 \times 6 = 8 \times 6$ $= 48$	**t** $32 \div 4 \times 5 = 8 \times 5$ $= 40$

2 Follow the order of operations to solve the following problems:

a $8 \times 5 + 7 = 40 + 7$ $= 47$	**b** $9 \times 4 + 14 = 36 + 14$ $= 50$
c $4 \times 8 - 5 = 32 - 5$ $= 27$	**d** $4 \times 8 - 9 = 32 - 9$ $= 23$
e $7 + 2 \times 9 = 7 + 18$ $= 25$	**f** $6 + 3 \times 2 = 6 + 6$ $= 12$
g $12 - 3 \times 3 = 12 - 9$ $= 3$	**h** $25 - 3 \times 7 = 25 - 21$ $= 4$
i $7 + 8 \div 2 = 7 + 4$ $= 11$	**j** $6 + 18 \div 3 = 6 + 6$ $= 12$

k) 48 ÷ 8 + 5 = 6 + 5 = 11	l) 63 ÷ 7 + 21 = 9 + 21 = 30
m) 36 ÷ 9 – 3 = 4 - 3 = 1	n) 42 ÷ 7 – 5 = 6 - 5 = 1
o) 12 – 10 ÷ 2 = 12 - 5 = 7	p) 15 – 14 ÷ 7 = 15 - 2 = 13

3 **Follow the order of operations to solve the following problems:**

a) 8 + 5 + 7 + 3 = 13 + 7 + 3 = 20 + 3 = 23	b) 25 – 8 – 3 – 6 = 17 - 3 - 6 = 14 - 6 = 8
c) 2 X 5 X 3 X 6 = 10 X 3 X 6 = 30 X 6 = 180	d) 48 ÷ 2 ÷ 4 ÷ 3 = 24 ÷ 4 ÷ 3 = 6 ÷ 3 = 2

4 Follow the order of operations to solve the following problems:

ⓐ $7 \times 3 + 5 \times 6$

= 21 + 30

= 51

ⓑ $6 \times 3 + 2 \times 5$

= 18 + 10

= 28

ⓒ $4 \times 8 - 3 \times 7$

= 32 - 21

= 11

ⓓ $9 \times 7 - 4 \times 6$

= 63 - 24

= 39

ⓔ $12 \div 4 + 15 \div 3$

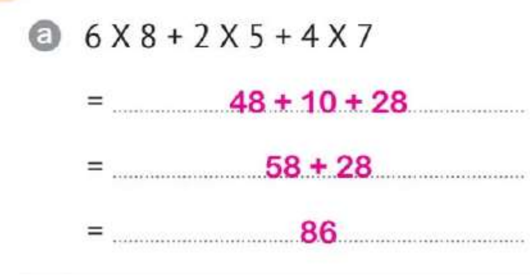
= 3 + 5

= 8

ⓕ $18 \div 6 + 24 \div 8$

= 3 + 3

= 6



ⓖ $36 \div 9 - 24 \div 8$

= 4 - 3

= 1

ⓗ $45 \div 5 - 42 \div 7$

= 9 - 6

= 3

5 Follow the order of operations to solve the following problems:

ⓐ $6 \times 8 + 2 \times 5 + 4 \times 7$

= 48 + 10 + 28

= 58 + 28

= 86

ⓑ $3 \times 9 - 4 \times 2 - 5 \times 2$

= 27 - 8 - 10

= 19 - 10

= 9

ⓒ $24 \div 3 + 30 \div 6 + 24 \div 8$

= 8 + 5 + 3

= 13 + 3

= 16

ⓓ $48 \div 2 + 35 \div 7 - 64 \div 8$

= 24 + 5 - 8

= 29 - 8

= 21

e) $5 + 4 \times 3 - 7$

= 5 + 12 - 7

= 17 - 7

= 10

f) $40 - 4 + 2 \times 8$

= 40 - 4 + 16

= 36 + 16

= 52

g) $3 \times 5 + 4 \times 3 - 9$

= 15 + 12 - 9

= 27 - 9

= 18

h) $8 + 35 \div 5 - 3 \times 4$

= 8 + 7 - 12

= 15 - 12

= 3

6 **Follow the order of operations to solve the following problems:**

a) $(5 + 7) \div 6$

= 12 ÷ 6

= ....

= 2

b) $4 \times (23 - 3)$

= 4 X 20

= ....

= 80

c) $(10 + 80) \div 3 - 20$

= 90 ÷ 3 - 20

= 30 - 20

= 10

d) $17 \times (15 - 8) + 2$

= 17 X 7 + 2

= 119 + 2

= 121

e) $(26 - 5 \times 2) \div 8$

= (26 - 10) ÷ 8

= 16 ÷ 8

= 2

f) $29 - (5 + 1 \times 4)$

= 29 - (5 + 4)

= 29 - 9

= 20

7 **Use numbers and symbols to represent what happens in each problem and then solve it. Remember the order of operations:**

ⓐ There were 194 persons in a concert. After the concert, 50 persons left in cars. The rest of them want to go home by microbus. If each microbus has seats for 9 persons, how many microbuses are needed for everyone to get home?

$194 - 50 = 144$ persons , $144 \div 9 = 16$ microbuses

ⓑ Bilal bought 6 bags of balloons. Each bag contains 18 balloons. He wants to give balloons to his friends at his birthday party. If he has 8 friends at the party, how many balloons will each friend get?

$18 \times 6 = 108$ balloons , $108 \div 8 = 13$ R 4 balloons

ⓒ Fatima went to her favorite store in the market and bought 6 baskets of eggs. Each basket contains 8 eggs.
Fatima used some eggs and left 38 eggs at the end of the day.
How can Fatima determine how many eggs she used?

$8 \times 6 = 48$ eggs , $48 - 38 = 10$ eggs

(d) Ahmed buys fabrics from 3 different weavers to display in his four stores. Last week, he bought 12 meters from the first weaver, 28 meters from the second weaver, and 40 meters from the third weaver. He wants to display the same number of meters of new fabrics in each store.
How can Ahmed determine how many meters of fabric to display in each store?

12 + 28 + 40 = 80 m , 80 ÷ 4 = 20 m

(e) Rashid made 42 baked goods. He divided them equally between him and his brother and sister. He ate some of the baked goods he kept for himself and only 4 were left.
How can Rashid determine how many biscuits he ate?

42 ÷ 3 = 14 , 14 – 4 = 10 biscuits

(f) A furniture company manufactures two types of chairs.
Model (A): 48 nails, 24 metal rings, and 21 pieces of wood.
Model (B): 52 nails, 32 metal rings, and 26 pieces of wood.
The company has assembled 15 Model (A) chairs and 7 Model (B) chairs today.
How can the company determine how many nails, metal rings and wood pieces they used in total?

15 X 48 = 720 nails, 15 X 24 = 360 metal rings, 15 X 21 = 315 pieces of wood

7 X 52 = 364 nails, 7 X 32 = 224 metal rings, 7 X 26 = 182 pieces of wood

720 + 364 = 1,084 nails, 360 + 224 = 584 metal rings, 315 + 182 = 497 pieces of wood

Assessment on Concept 1

Unit 8

1 Choose the correct answer:

ⓐ $4 + 6 \times 2 =$ ...... **16** ...... (20 or 16 or 12 or 26)

ⓑ $(5 + 3) \times (8 - 4) =$ ...... **32** ...... (32 or 25 or 60 or 8)

ⓒ A square whose side length is 8 cm, its area is ...... **64** ...... cm^2. (16 or 32 or 64 or 40)

ⓓ $40 \times$ ...... **500** ...... $= 20,000$ (5 or 50 or 500 or 5,000)

ⓔ $(3 \times 8) \times 7 = 3 \times (8 \times 7)$ " ...... **Associative** ...... Property" (Distributive or Commutative or Associative or Identity)

2 Follow the standard order of operations to solve:

ⓐ $9 + 3 - 5$
= ...... **12 - 5** ......
= ...... **7** ......
= ......

ⓑ $8 \times 6 \div 4$
= ...... **48 ÷ 4** ......
= ...... **12** ......
= ......

ⓒ $9 + 6 \div 3$
= ...... **9 + 2** ......
= ...... **11** ......
= ......

ⓓ $9 - 4 \times 2$
= ...... **9 - 8** ......
= ...... **1** ......
= ......

ⓔ $60 \times (8 + 4) \div 6 + 3 =$ ...... **60 X 12 ÷ 6 + 3** ......
= ...... **720 ÷ 6 + 3** ......
= ...... **120 + 3** ......
= ...... **123** ......

3 Fatima has 4 pen cases with 6 pens each and 3 pen boxes with 5 pens each. How many total pens does she have?

...... **(4 X 6) + (3 X 5) = 24 + 15 = 39 pen** ......

......

Assessments on Units

Assessment on Unit 1

First: **Choose the correct answer:**

1. Three million, three thousand, three = ... **(In standard form)**

   (a) 30,303 (b) 3,030,030 (c) 3,003,003 (d) 3,300,300

2. 23,080,250 = ... **(In word form)**

   (a) Three hundred sixty million, eighty thousand, two hundred fifty

   (b) Twenty-three million, eight hundred thousand, two hundred fifty

   (c) Twenty-three million, eighty thousand, two hundred fifty

   (d) Three hundred sixty million, eight hundred, two thousand, fifty

3. 706,200,405 = ... **(In expanded form)**

   (a) 700,000,000 + 6,000,000 + 200,000 + 400 + 5

   (b) 700,000,000 + 6,000,000 + 200 + 40 + 5

   (c) 70,000,000 + 6,000,000 + 20,000 + 400 + 5

   (d) 700,000,000 + 6,000,000 + 200,000 + 40 + 5

4. Three milliard, five hundred ninety thousand, three hundred five

   = ... **(In standard form)**

   (a) 3,000,590,305 (b) 3,590,305

   (c) 3,590,000,305 (d) 3,005,900,305

5. (3 X 100,000,000) + (8 X 10,000,000) + (6 X 10,000) + (2 X 100)

   = ... **(In standard form)**

   (a) 300,860,200 (b) 308,060,200

   (c) 380,060,200 (d) 380,600,200

6 .... is the smallest number formed from 10 digit.

a Million b Ten million c Hundred million **d Milliard**

7 The value of the digit 3 in the number 532,689,127 is ....

a 300,000 b 3,000,000 **c 30,000,000** d 300,000,000

8 40,225,885 < ....

a 8,688,988 **b 41,200,800** c 9,999,999 d 39,009,000

9 258,456 ≈ .... *(To the nearest 10,000)*

a 250,000 **b 260,000** c 200,000 d 300,000

10 The **smallest** whole number that can be rounded to the nearest **100**, so that the result is 2,300, is ....

a 2,350 **b 2,250** c 2,301 d 2,299

Second: Complete the following:

1 The place value of the digit 6 in 658,478,203 is **Hundred Millions**

2 200 Hundred = **20** Thousand

3 2 milliard + 7 million + 225 thousand + 102 = ...

Two milliard, seven million, two hundred twenty five thousand, one hundred two . **(In word form)**

4 The digit 4 in 248,237,752 is in the **Ten Millions** place.

5 The value of the digit 5 in the Hundred Thousands place is **500,000** .

6 3,000,000 = **3,000** thousand

7 Decompose 7,305,057 =

(7 X **1,000,000**) + (3 X **100,000**) + (5 X **1,000**)

+ (5 X **10**) + (7 X **1**)

8 Nine milliard, seven hundred five million, thirty thousand, six

= **9,705,030,006** **(In standard form)**

9 654,215 ≈ **650,000** *(To the nearest 10,000)*

10 **44,500** ≈ 45,000 *(To the nearest 1,000)*

*(Complete with the **smallest** number possible)*

Third: Complete using (< , = or >):

1. 200,002,780 (<) 200,020,078
2. (5 X100,000,000) + (5 X 1) (<) 550,000,000
3. 620,000,602 (>) 62 million, 602
4. Three hundred million, three hundred (<) 300,300,000
5. The value of the digit 8 in the Hundred Thousands place (=) 800,000

Fourth: Arrange the following numbers in an ascending order. Write the numbers in standard form

Number	Standard Form	Order
30,000,450	30,000,450	a 2
(3 X 1,000,000) + (4 X 100) + (5 X 1)	3,000,405	b 1
Three hundred million, four hundred, fifty	300,000,450	c 4
50 + 400 + 3,000,000,000	3,000,000,450	d 5
30 million, 450 thousand	30,450,000	e 3

Fifth: Write each of the following numerical forms in standard form, then round the number to the nearest 100:

Numerical Form	Standard Form	To the Nearest 100
a Five thousand, five hundred ninety-nine	5,599	5,600
b 4 thousand, 985	4,985	5,000
c 90,000 + 400 + 30 + 2	90,432	90,400
d (8 X 10) + (3 X 1)	83	100

Assessment on Unit 2

First: **Choose the correct answer:**

1. 25 + 152 = 152 + 25 (.................... Property)

   ⓐ Identity Element ⓑ Associative
   ⓒ Commutative ⓓ Distributive

2. 63 + (15 + 95) = (63 + 15) + 95 (.................... Property)

   ⓐ Identity Element ⓑ Associative
   ⓒ Commutative ⓓ Distributive

3. 258 + 0 = 258 (.................... Property)

   ⓐ Identity Element ⓑ Associative
   ⓒ Commutative ⓓ Distributive

4. 456 + 998 = 454 + ...

   ⓐ 999 ⓑ 990 ⓒ 1,000 ⓓ 996

5. 369 + 254 = ...

   ⓐ 369 + 200 + 50 + 4 ⓑ 369 + 2 + 4 + 5
   ⓒ 369 + 25 + 4 ⓓ 369 + 2 + 54

6. The equation that represents the following **bar model** is ....

   ⓐ $\chi + 120 = 750$ ⓑ $750 - \chi = 150$
   ⓒ $\chi - 150 = 750$ ⓓ $\chi = 750 + 150$

750	
χ	150

7. The bar model that represents this equation **"32 – y = 15"** is ....

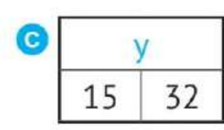
ⓐ

32	
15	y

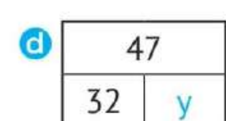
ⓑ

15	
32	y

ⓒ



ⓓ



8. 158,456 + 252,234 = ...

(a) 300,780 (b) **[410,690]** (c) 300,690 (d) 790,410

9. If $\chi + 245 = 786$, then χ = ...

(a) 245 + 786 (b) **[786 – 245]** (c) 245 + 541 (d) 786 – 541

10. If $452 - y = 152$, then y = ...

(a) 452 + 152 (b) 152 + 200 (c) **[452 – 152]** (d) 452 – 200

Second: Complete the following:

1. 45 + 21 = ...**21**.... + 45 (....**Commutative**.... Property)
2. (45 + 25) + 15 + ...**13**.... = ...**45**.... + (....**25**.... + 15) + 13 (....**Associative**.... Property)
3. 254 + ...**0**.... = 254 (....**Additive Identity Element**.... Property)
4. 25,475 + 85,235 = ...**110,710**....
5. 600,800 – 365,247 = ...**235,553**....
6. If $\chi + 258 = 500$, then χ = ...**242**....
7. If $458 + y = 600$, then y = ...**142**....
8. If $m - 524 = 214$, then m = ...**738**....
9. If $842 - z = 600$, then z = ...**242**....
10. 2,456 + 3,375 = ...**5,831**.... ≈ ....**6,000**.... (To the nearest 1,000)

Third: Answer the following:

(a) In one week, 6,245 tourists visited the Pyramids, and in the following week 5,375 tourists did.

How many tourists visited the Pyramids in the two weeks?

Bar Model:

χ	
6,245	5,375

Equation: ....**χ = 6,245 + 5,375**.... .

Solution: ....**χ = 11,620**.... .

b Sarah had **1,025** pounds. She bought a dress for **675** pounds.
How many pounds does Sarah have left?

Bar Model:

1,025	
675	χ

Equation: $\chi = 1,025 - 675$.

Solution: $\chi = 350$.

c A road with a length of **9,150 meters** was paved in three days, of which **345 meters** were paved on the first day, and **290 meters** on the next day. How many meters were paved on the third day?

345 + 290 = 635 m

9,150 – 635 = 8,515 m

Accumulative Assessments on Units 1&2

Assessment 1

1 Complete the following:

a) 7,000,021 = ...7...... Millions + ...0...... Thousands + ...21......

b) 245 + 243 = ...243...... + 245

c) 0 + ...9...... = 9 "......Identity Element...... *Property*"

d) 50 Ten Thousands = ...500,000...... .

2 Choose the correct answer:

a) When approximating the number 3,999 to the nearest Ten, it is ......4,000......

(4,900 or **4,000** or 5,990 or 5,000)

b) 45 + 0 = 45 (......Identity Element...... *Property*)

(Distributive or **Identity Element** or Commutative or Associative)

c) 5,000 + 20 + 3 = ...5,023......

(50,203 or 523 or **5,023** or 5,000,203)

d) The place value of the digit 7 in 9,657,123 ..thousand..

(millions or milliards or hundreds or **thousands**)

3 Compare using (< , = or >):

a) 900 Thousands	<	90 Millions
b) 6,000,000,000 + 4,000 + 2	>	6,000,000+80,000+100
c) 456,258 + 543,742	<	The greatest 7-digit number
d) 10,000+8,000+ 200+80+7	=	18,654 – 367

4 Answer the following questions:

a The number of girls in a school is 458, and the number of boys is 367. What is the total number of students in this school?

Total = 458 + 367 = 825 students

b Salma was counting the ants in the colony. She counted 1,525 ants on Monday, 19,750 ants on Tuesday, and 3,705 ants on Wednesday. If there are 30,520 ants in the colony, how many ants does she still need to count?

Total she counted = 1,525 + 19,750 + 3,705 = 24,980 ants

Number of ants she needs to count = 30,520 – 24,980 = 5,540 ants

c **Find the result:**

1
```
  235,147
+ 235,448
---------
  470,595
```

2
```
  65,254
- 36,142
--------
  29,112
```

Assessment 2

1 Complete the following:

a 27,957 ≈ 30,000 *(To the nearest* **10,000***)*

b 27 + 19 = 19 + **27** "**Commutative** *Property*"

c 245 + 243 = **243** + 245

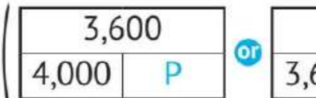
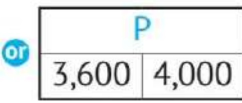
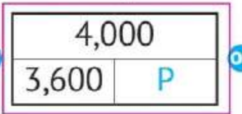
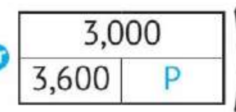
d Six milliard, eight hundred fifteen million, four hundred thousand, thirty = **6,815,400,030** *(standard form)*

2 Choose the correct answer:

a (8 X 100,000,000) + (8 X 1,000) = **800,008,000**

(88,000,000 or 808,000 or 800,008,000 or 800,800,000)

b A store has 4,000 toys, and 3,600 toys are left. If P represents the number of sold toys, which bar model represents this equation?

( or  or  or )

c If the place value of the digit 5 is the Ten Thousands, then its value is ......50,000...... (50 or 500 or 50,000 or 50,000,000)

d 75 – 49 = 74 – ......48...... (50 or 48 or 98 or 99)

3 Compare using (<, = or >):

a Five hundred seventy thousands, ninety-eight (=) 500,000+70,000+90+8

b Six milliard, two hundred thousands (>) 6,000,000,000 + 200

c Four hundred fifty two millions, six hundred ninety-five (<) 4,520,003,695

d 290 + 530 (=) 732 + 88

4 Answer the following questions:

a Write the number 6,254,835 in the decomposed form:

......6,000,000 + 200,000 + 50,000 + 4,000 + 800 + 30 + 5......

b Sarah had 6,250 pounds, she bought a mobile for 4,630 pounds. How many pounds are left with Sarah?

......6,250-4,630 = 1,620......

c **Arrange the following numbers in an ascending order:**

354,456 , 345,456 , 345,465 , 354,465

......345,456...... , ...345,465...... , ...354,456...... , ...354,465......

Assessment on Unit 3

First: **Choose the correct answer:**

1. The best unit for measuring the **height** of a class is ....
   - a meters
   - b centimeters
   - c millimeters
   - d kilometers

2. The best unit for measuring a dog's **mass** is ....
   - a grams
   - b centigrams
   - c milligrams
   - d kilograms

3. The best unit for measuring a car's fuel tank is ....
   - a liters
   - b centiliters
   - c milliliters
   - d gram

4. The time is now 10:25, . What will the time be after fifty minutes?

   ....
   - a 10:50
   - b 10:15
   - c 11:25
   - d 11:15

5. 120 **hours** = ... **days**
   - a 2
   - b 6
   - c 5
   - d 12

6. The .... is one of the **graduated scales** that we see in our daily lives.
   - a car
   - b mobile phone
   - c balance
   - d calculator

7. The **height** of Cairo Tower is 198 meters. How high is it in centimeters?
   - a 198 cm
   - b 1,980 cm
   - c 19,800 cm
   - d 198,000 cm

8. If Shaimaa's weight is 65 kilograms and 500 grams, then her weight in grams is ....
   - a 565 g
   - b 650,500 g
   - c 65,000,500 g
   - d 65,500 g

9. "**20** to **3**", represented on the digital clock as [...... : ......] .
   - a 3:20
   - b 2:40
   - c 2:20
   - d 4:20

10. If a fish tank contains 20 liters and 250 milliliters of water, then the **volume** of the water in the tank in milliliters is ....
    - a 20,250 mL
    - b 2,250 mL
    - c 25,020 mL
    - d 2,025 mL

Second: Complete the following:

1. 10 **meters** and 25 **centimeters** = ...1,025.... **centimeters**
2. 20,015 **meters** = ...20.... **kilometers** and ....15.... **meters**
3. 15,040 **grams** = ...15.... **kilograms** and ....40.... **grams**
4. 400,020 **milliliters** = ...400.... **liters** and ....20.... **milliliters**
5. 4 **kilometers** = ...4,000.... **meters**
6. 20,000 **grams** = ...20.... **kilograms**
7. 500 **liters** = ..500,000.. **milliliters**
8. 6:45 + 2:28 = ...9.... : ....13....
9. 8:00 – 7:37 = ...00.... : ....23....
10. 250 **minutes** = ...4.... **hours** and ....10.... **minutes**

Third: Complete using (< , = or >):

1. 7 weeks (>) 45 days
2. 3 days (>) 46 hours
3. 2 hours (<) 150 minutes
4. 4 minutes (=) 240 seconds

Fourth: Arrange the following lengths in an ascending order:

400 cm , 40 m , 4 dm , 4 km

....4 dm.... , ...400 cm.... , ...40 m.... , ...4 km....

Fifth:

Salah has been in football training for two hours and 30 minutes. If Salah goes to training three days a week, how many minutes does he spend in training per day? And how many minutes does Salah spend in training per week?

....120 + 30 = 150 minutes....

....150 + 150 + 150 = 450 minutes....

....

Accumulative Assessments on Units 1 – 3

Assessment 1

1 Complete the following:

a) 300,750 = (3 X ..100,000..) + (7 X ..100..) + (5 X ..10..)

b) 12,000 = 10 times of ..1,200..

c) 5,065 cm = ..50.. m, ..65.. cm

d) 27,957 ≈ 30,000 *(To the nearest ..10,000..)*

2 Choose the correct answer:

a) Which of the following represents the Commutative Property of Addition? (635 + 492 = 492 + 635 or 0 + 847 = 847 or (18 + 2) + 16 = 36 or 1 + 131 = 132)

b) The additive identity is ..0.. (0 or 1 or 2 or 3)

c) If 9 + X = 27, then X = ..18.. (927 or 36 or 18 or 3)

d) A kilogram is a measurement unit of the ..mass.. .
(volume or height or mass or capacity)

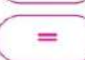
3 Compare using (< , = or >):

a) Four hundred fifty-two million, six hundred ninety-five (<) 4,520,003,695

b) 4,000 grams (<) 40,000 kilograms

c) 2 (>) 100,000 - 99,999

d) 72 hours (=) 3 days



4 Answer the following questions:

a) Write the number (2 million, 235 thousand, 624) in the expanded form.

..2,000,000 +200,000 + 30,000 + 5,000 + 600 + 20 + 4..

b The distance between Samah's house and her school is 2 km.

What is the distance in meters, decimeters, and centimeters?

2 km = ...2000........ m = ...20,000..... dm = ...200,000... cm

c Salma trains to swim for an hour and 15 minutes. If she starts training at 5:35, when will Salma finish training?

5:35 + 1:15 = 6:50

d 3:45 + 2:15 = ...5........ : ....60........ = 6:00

Assessment 2

1 Complete the following:

a If $X - 20 = 30$, then $X =$ ....50........

b 155 cm = ...15........ dm, ...5........ cm

c 2,617 – 1,716 = ...901........

d The additive identity element is ....0........

2 Choose the correct answer:

a 8 L = ...8,000.... mL (8 or 8,000 or 80 or 800)

b The largest number that can be formed from the digits (5, 3, 4, 7, 0, 6) is ....765,430.... (534,706 or 765,430 or 706,543 or 304,567)

c The smallest 9-digit number < one milliard .

(one milliard or 100 million or 999 thousand or 99 million)

d The gram is the best unit for measuring the mass of a ....ring........ .

(ring or child or car or chair)

3 Compare using (< , = or >):

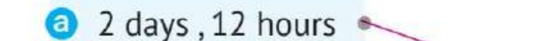
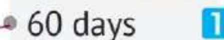
a (3 X 1,000,000,000) + (3 X 10) (<) 3,000,003,000

b 23,023 mL (=) 23 L , 23 mL

c Milliard (=) 1,000,000,0000

d 1,000 mL (<) 100 liters

4 Match:

a 2 days , 12 hours	60 days 1
b 8 weeks , 4 days	60 minutes 2
c 1 minute	60 hours 3
d 1 hour	60 seconds 4

(a → 3, b → 1, c → 4, d → 2)

5 Answer the following questions:

a The fish tank can be filled with 50 liters of water. If the tank contains 35 liters and 130 milliliters, how much water do we need to fill the tank?

50L = 50,000 mL 35L + 135mL = 35,135 mL

we need = 50,000 – 35,130 = 14,850 mL

b If the weight of Hala is 65 kg and 250 g. What is the weight of Hala in grams?

65,250 g

Assessment on Unit 4

First: **Choose the correct answer:**

1. A rectangle of 8 cm length and 6 cm width, its **perimeter** is .... cm.
   (a) 8 + 6 + 8 + 6 (b) 8 X 6 X 8 X 6 (c) 8 X 6 X 2 (d) 8 + 6 + 2

2. A rectangle has a length of 9 cm and a width of one third of its length, then its **area** = ... cm^2.
   (a) 12 (b) 27 (c) 24 (d) 36

3. A square has an area of 64 cm^2, then its **perimeter** = ... cm.
   (a) 8 (b) 16 (c) 32 (d) 64

4. A square has a perimeter of 28 cm, then its **area** = ... cm^2.
   (a) 49 (b) 14 (c) 7 (d) 21

5. A rectangle has a perimeter of 24 cm and a length of 9 cm, then its **area** is .... cm^2.
   (a) 3 (b) 31 (c) 12 (d) 27

6. Which of the following is a formula for the **perimeter of a rectangle**?
   (a) P = L + W + 2 (b) P = (L X W) X 2
   (c) P = (L X 2) + (W X 2) (d) P = (L X W) + 2

7. Which of the following is a formula for the **perimeter of a rectangle**?
   (a) P = L + W + L + W (b) P = L X 2 X W X 2
   (c) P = (L + 2) X (W + 2) (d) P = (L + W) + 2

8. Which of the following is a formula for the **area of a rectangle**?
   (a) A = L X W (b) A = L X W X 2
   (c) A = L + W (d) A = L + W + 2

9 The area of a rectangle whose length is 9 cm and its width is 4 cm is **equal** to the area of a square that has a **perimeter** of .... cm.

$\boxed{\text{a } 24}$ b 36 c 13 d 18

10 The perimeter of a square that has an area of 25 cm^2 is equal to the perimeter of a rectangle whose **dimensions** are ....

a 12 cm, 13 cm b 8 cm, 12 cm

$\boxed{\text{c } 6\text{ cm}, 4\text{ cm}}$ d 5 cm, 5 cm

Second: Complete the following:

1 A rectangle of 15 m length and 10 m width, its **perimeter** is ....50 m.... .

2 If a square has a 6 cm side length, then its **perimeter** is ....24 cm.... .

3 A square whose sides are 7 mm has a **surface area** of ....49.... mm^2.

4 A rectangle has a length of 8 cm and a width of 4 cm. Its **surface area** is ....32.... cm^2.

5 A rectangle has a perimeter of 18 cm and a length of 7 cm, then its **area** is ....14.... cm^2.

6 If a rectangle has an area of 72 cm^2 and a width of 8 cm, then its **perimeter** is ....34.... .

7 If a square has a perimeter of 36 cm, then its side **length** is ....9.... cm.

8 If a square has an area of 36 cm^2, then its side **length** is ....6.... cm.

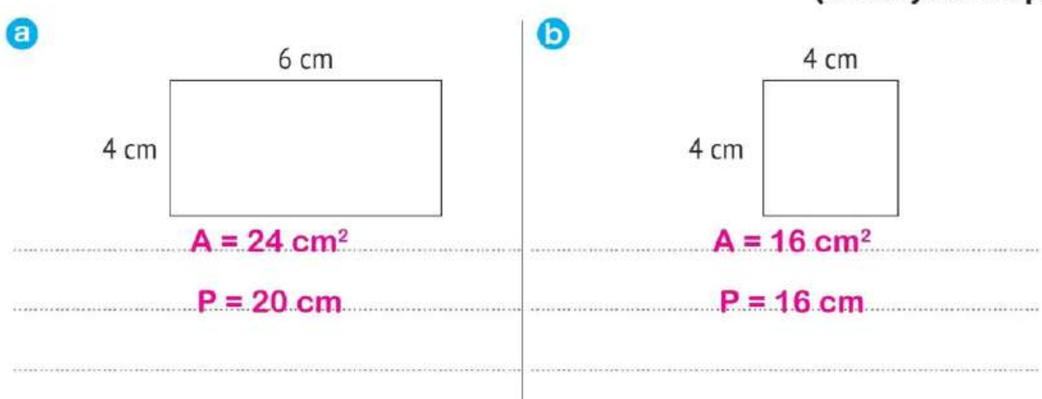
9 If a square has a perimeter of 16 cm, then its **area** is ....16.... cm^2.

10 If a square has an area of 64 cm^2, then its **perimeter** is ....32.... cm.

Third: Answer the following:

1 Calculate the **area** and **perimeter** of each of the following shapes:

(Show your steps)

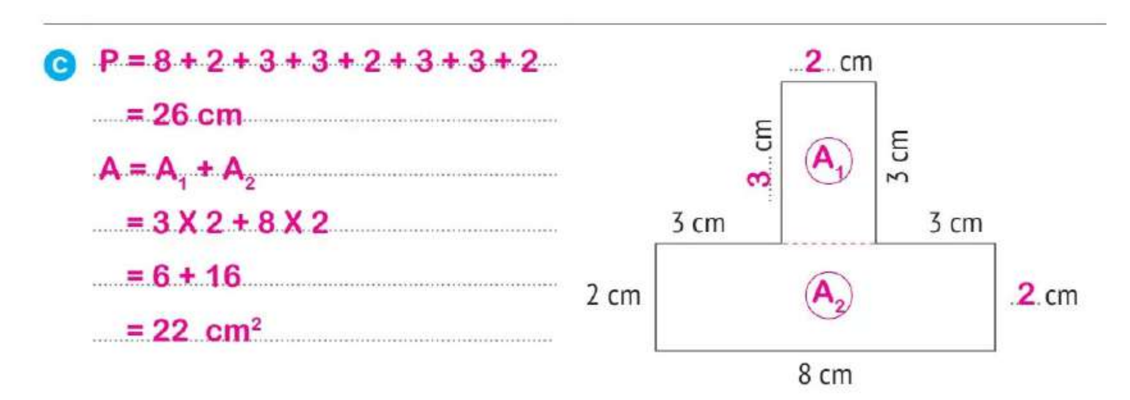


a) $A = 24\ cm^2$

$P = 20\ cm$

b) $A = 16\ cm^2$

$P = 16\ cm$



c) $P = 8 + 2 + 3 + 3 + 2 + 3 + 3 + 2$

$= 26\ cm$

$A = A_1 + A_2$

$= 3 \times 2 + 8 \times 2$

$= 6 + 16$

$= 22\ cm^2$

2 Adam has a rectangular computer keyboard that is 40 cm long and 15 cm wide. How can Adam calculate the perimeter of the keyboard?

$P = (40 + 15) \times 2 = 110\ cm$

Accumulative Assessments on Units 1 – 4

Assessment 1

1 Complete the following:

a A square has a side length of 6 cm, then its perimeter is ....24........ .

b 3 weeks and 1 day = ...22........ days

c Using the opposite bar model, m = ...326........ .

526	
200	m

d 27,957 ≈ 30,000 *(To the nearest ....10,000........)*

2 Choose the correct answer:

a A rectangle has a length of 7 cm and a width of 5 cm. Its perimeter is ....24........ cm. (97 or 13 or 35 or 24)

b 4 liters and 15 milliliters = ...4,015........ milliliters (4,150 or 4,015 or 40,015 or 415)

c The additive identity is ....0........ . (1 or 0 or 10 or 60)

d 12 Millions + 15 Thousands + 20 = 12,015,020 (201,512 or 20,015,012 or 121,520 or 12,015,020)

3 Compare using (< , = or >):

a 456,258 + 543,742 (>) The greatest 7-digit number

b 1 milliard (=) 1,000,000,000

c 6 min, 4 sec (>) 4 min, 6 sec

d The perimeter of a square of side length 6 cm (=) The perimeter of a rectangle of dimensions 7 cm and 5 cm

4 Answer the following questions:

a) A square picture has a side length of 30 cm. What is the perimeter of the frame for this picture?

30 x 4 = 120 cm

b) Mohamed bought a laptop for 5,250 LE and a mobile for 2,750 LE. If he had 10,000 LE, how much money would be left with him?

10,000 - (5,250 + 2 ,750) = 2,000 LE

c) A rectangular room is 10 meter long and 5 meter wide, find the perimeter and area of the room.

Per. = (10 + 5) x 2 = 30 cm

area = 10 x 5 = 50 cm2

Assessment 2

1 Complete the following:

a) 5 m, 5 dm = ...55... dm

b) 74,632 ≈ ...75,000... *(To the nearest 1,000)*

c) 84 + 37 *(To the nearest 10)* ...80... + ...40... = ...120...

d) Perimeter of the rectangle: P = (...L... + ...W...) X 2

2 Choose the correct answer:

a) Omar had 4,500 pounds, and after two years, the amount he had has been ten times. How much money does Omar have now?

(9,000 or 4,510 or [45,000] or 45,004,500)

b) The smallest 6-even-digit number is ...100,000... .

(999,998 or 100,003 or [100,000] or 102,254)

c) The best unit for measuring the length of an insect is ....**Millimeters**

(decimeters or meters or centimeters or [millimeters])

d) A square has a side length of 8 cm, then its area is ....**64**.......... cm^2.

(88 or 32 or [64] or 16)

3 Compare using (< , = or >):

a) 900 Thousands	(<)	90 Millions
b) 10,000 + 8,000 + 200 + 80 + 7	(=)	18,654 – 367
c) The number of days of the week	(<)	10
d) 23,023 mL	(=)	23 L, 23 mL

4 Answer the following questions:

a) A square picture has a side length of 8 cm. Hussein wants to make a piece of glass to cover this picture, What is the area of the glass piece?

Area = 8 x 8 = 64 cm^2

b) 4,000 – 2,352 = ...**1648**........

Assessment on Unit 5

First: **Choose the correct answer:**

1. The equation $18 = 3 \times b$ represents the comparison ....
   - (a) 18 is 6 times more than b
   - (b) 3 is 18 times more than b
   - (c) 18 is 3 times more than b
   - (d) b is 3 times more than 18

2. $8 + 8 + 8 + 8 + 8 =$ ....
   - (a) 8×8
   - (b) $8 + 8$
   - (c) $8 + 5$
   - (d) 8×5

3. $6 \times 4 =$ ....
   - (a) $6 + 6 + 6 + 6$
   - (b) $6 \times 6 \times 6 \times 6$
   - (c) $4 + 4 + 4 + 4$
   - (d) $4 \times 4 \times 4$

4. If $5 \times 7 = \chi$, then ....
   - (a) χ is 7 times more than 7
   - (b) χ is 5 times more than 7
   - (c) 5 is 7 times more than χ
   - (d) χ is 5 times more than 5

5. The **equation** that represents **"12 is 3 times as many as m"** is ....
   - (a) $12 = 3 \times m$
   - (b) $m = 3 \times 12$
   - (c) $3 = 12 \times m$
   - (d) $m = 36 \times 3$

6. The equation that represents "**28 is 4 times greater than n**" is ....
   - (a) $28 = 4n$
   - (b) $28n = 4$
   - (c) $28 = 4 + n$
   - (d) $28 - n = 4$

7. If $8 \times 5 = a \times 8$, then $a =$ ....
   - (a) 40
   - (b) 8
   - (c) 5
   - (d) 64

8 200 X .... = 10,000

a 5 | **b 50** | c 500 | d 5,000

9 8 X 5 X 4 = (8 X 5) X 4 = ... X 4

a 40 | b 8 | c 20 | d 10

10 8 X 500 = 40 X ....

a 5 | **b 100** | c 10 | d 1,000

Second: Complete the following:

1 3 X 4 X 5 = 3 X **20**

2 9 X 3 = **9** + **9** + **9**

3 The equation that represents "**36 is 4 times greater than *n***" is **36 = 4n** .

4 If $5\chi = 35$, then χ = **7** .

5 20 X 50 = 50 X **20**

6 **40,000** = 80 X 500

7 600 X **50** = 30,000

8 (5 X 8) X 6 = **40** X **6** = **240**

9 6 X 30 = 18 X **10** = **180**

10 9 X **400** = 36 X 100 = **3,600**

Third: Write an equation for the following comparisons. Use letters to represent the unknown, then find their values:

1 ***m*** is 8 times greater than 6.

Equation: **m = 8 X 6** . **Solution:** **m = 48** .

2 24 is 8 times more than ***n***.

Equation: **24 = 8 n** . **Solution:** **n = 24 ÷ 8 = 3** .

3 21 is ***a*** times as many as 3.

Equation: **21 = a X 3** . **Solution:** **a = 21 ÷ 3 = 7** .

4 ***x*** is 6 times greater than 7.

Equation: **χ = 6 X 7** . **Solution:** **χ = 42** .

Fourth: Answer the following:

a Mahmoud has 20 crayons, which is 5 times more than the number of crayons that Hazem has. How many crayons does Hazem have? Write a multiplication equation representing this problem, and then solve it.

$20 = 5\chi$

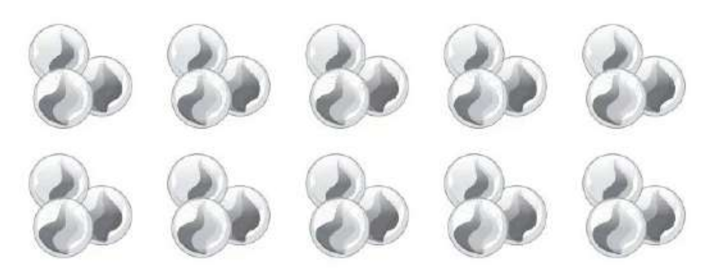
$\chi = 20 \div 5 = 4$ crayons

b Nader has 12 oranges. Write an equation using the Commutative Property of Multiplication to describe the two ways in which he can arrange the oranges.

3 X 4 = 4 X 3 $\chi = 20 \div 5$

2 X 6 = 6 X 2 = 4 crayons.

c Use the Associative Property of Multiplication to calculate the number of marbles in the following picture.



3 X 5 X 2 = 3 X (5 X 2) = 3 X 10 = 30

Accumulative Assessments on Units 1 – 5

Assessment 1

1 Complete the following:

a) ......540...... – 420 = 120

b) 36 + 35 = 35 + 36. The property used is Commutative property.

c) 9 m, 2 cm = ...902...... cm

d) The number that comes just before 9,000,000 is 8,999,999 .

2 Choose the correct answer:

a) The digit 8 in 214,284,697 is in the Ten thousand place.

(Ones or Tens or Ten Thousands or Ten Millions)

b) 91,024 + 32,549 = ...123,563...

(123,563 or 321,547 or 123,573 or 123,654)

c) 5,000 milliliters = ...5...... liters (5 or 50 or 500 or 5,000)

d) If $3x = 9$, then x = ...3...... . (3 or 27 or 12 or 6)

3 Compare using (< , = or >):

a) 3,000 m	=	3 km
b) The area of a square with side length of 6 cm	>	The area of a rectangle with dimensions 8 cm and 4 cm
c) 10 Hundreds	>	20 Tens
d) 30 X 100	<	300 Hundreds

4 **Answer the following questions:**

a A painting is 5 meters in length and 2 meters in width. Find the perimeter of the necessary frame for this painting.

(5 + 2) x 2 = 14 m

b If the weight of Hala is 65 kg and 250 g. What is the weight of Hala in grams?

65,000+250 = 65,250 g

Assessment 2

1 **Complete the following:**

a The additive identity element is ...... 0 ......

b 108 mm= ...... 10 ...... cm, ... 8 ...... mm

c A rectangle has a length of 5 cm and a width of 3 cm, its perimeter is ...... 16 ...... cm .

d 5 times greater than 3 is ...... 15 .... Equation: ...... 5 x 3 = m ....

2 **Choose the correct answer:**

a Four milliard, six hundred five million, ninety thousand, fifteen = ... 4,605,090,015

(4,065,090,015 or 4,650,900,015 or 4,605,090,015 or 9,506,415)

b ...... perimeter ...... is the measurement of the distance around the shape.

(Perimeter or Area or Square or S X S)

c 8 + 8 + 8 + 8 = ... 8 x 4 ...... (8 + 8 or 8 X 8 or 8 X 4 or 8 + 4)

d 7 X (3 X 5) = (...... 7 ...... X 3) X 5 (21 or 7 or 5 or 3)

3 Compare using ($<$, $=$ or $>$):

a 240	$<$	6 x 400
b 7,000 g	$<$	18 kg
c 5 Millions	$>$	5,000 Hundreds
d 456,258 + 543,742	$<$	The greatest 7-digit number

4 Answer the following questions:

a Ola's age is three times Maha's age. If Maha is 5 years old, then how old is Ahmed?

Ola's age = 5 x 3 = 15 years

b A city is in the shape of a rectangle. It is 4 kilometers wide and 8 kilometers long. What is the area of this city?

Area = 8 x 4 = 32 km^2

c The fish tank can be filled with 50 liters of water. If the tank contains 35 liters and 130 milliliters, how much water do we need to fill the tank?

50,000 – 35,130 = 14,870 mL

Assessment on Unit 6

First: Choose the correct answer:

1. The number of **factors** of 16 is ....
   - a) 3
   - b) 4
   - c) 5
   - d) 6

2. 17 is a **prime** number because ....
   - a) it has one factor only
   - b) it has two factors only
   - c) it has no factors
   - d) it has more than two factors

3. The number that has the **factors** (1 , 2 , 3 , 4 , 6 , 8 , 12 , 24) is ....
   - a) 8
   - b) 12
   - c) 24
   - d) 36

4. The **smallest odd** prime number is ....
   - a) 0
   - b) 1
   - c) 2
   - d) 3

5. The **greatest common factor** of 24 and 36 is ....
   - a) 6
   - b) 12
   - c) 4
   - d) 3

6. .... is a **common multiple** of 8 and 6.
   - a) 12
   - b) 16
   - c) 48
   - d) 36

7. If 6 X 8 = 48, then ....
   - a) 48 is a multiple of 6 and 8
   - b) 48 is a factor of 6
   - c) 48 is the sum of 6 and 8
   - d) 6 is a factor of 8

8. .... is an **odd** number and a **multiple** of the two numbers 5 and 7.
   - a) 70
   - b) 49
   - c) 35
   - d) 25

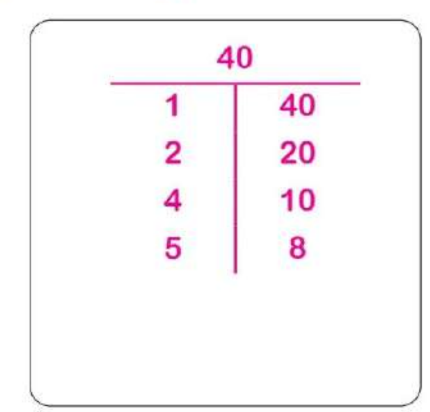
9. .... is an **even** number and a **multiple** of the two numbers 5 and 3.
   - a) 15
   - b) 45
   - c) 60
   - d) 50

10. .... is an **even** number, and (2 , 3 , 6 , 9) are of its **factors**.
    - a) 30
    - b) 24
    - c) 45
    - d) 36

Second: Complete the following:

1. The **factors** of 14 are ......1...... , ...2...... , ...7...... , ...14...... .
2. The **smallest odd** prime number is ......3...... .
3. The **prime numbers** between 20 and 40 are ......23...... , ...29...... , ...31......, and ......37...... .
4. The number that has **two factors only** is called a ......prime...... number.
5. The **smallest** two-digit prime number is ......11...... .
6. 2 is a factor of a number if the **Ones** digit of this number is ......0 , 2 , 4 , 6 or 8...... .
7. Multiples of 6, up to 20 are ......0 , 6 , 12 , 18...... .
8. The **common multiples** of 4 and 6 between 20 and 50 are ..24 , 36 , 48.. .
9. The relationship between the numbers 5, 6 and 30 is that 30 is a ......multiple...... for 5 and 6.
10. ......7...... is a prime number and the sum of its factors is 8.

Third: Find the greatest common factor for 40 , 32:



32	
1	32
2	16
4	8

The factors of 40:

......1 , 2 , 4 , 5 , 8 , 10 , 20 , 40......

The factors of 32:

......1 , 2 , 4 , 8 , 16 , 32......

The **common factors** are: ......1 , 2 , 4 , 8...... .

The **greatest common factor** (GCF) is: ......8...... .

Fourth: **Find the multiples of 6 and 8, up to 50, then find the common multiples between them:**

The **multiples** of 6 are: 0 , 6 , 12 , 24 , 30 , 36 , 42 , 48 .

The **multiples** of 8 are: 0 , 8 , 16 , 24 , 32 , 40 , 48 .

The **common multiples** of the two numbers are: 0 , 24 , 48 .

Fifth: There is an alarm that rings every **3** hours and another alarm that rings every **two** hours. If they ring together at **12:00**, when will they ring again together? (Show your steps)

First alarm rings at =

12:00 , 3:00 , (6:00), 9:00 , 12:00

Second alarm rings at:

12:00 , 2:00 , 4:00 , (6:00), 8:00 , 10:00 , 12:00

They ring again together at 6 o'clock

Sixth: Hana has **12** red balloons, **18** blue balloons, and **24** white balloons. Hana wants to form **equal groups** of balloons, so that all groups contain the same number of balloons of different colors.

How many groups can be formed?

How many balloons of each color are in each group?

(GCF) of (12, 18, 24) is 6

Red balloons = 12 ÷ 6 = 2 balloons

Blue balloons = 18 ÷ 6 = 3 balloons

White balloons = 24 ÷ 6 = 4 balloons

Accumulative Assessments on Units 1 – 6

Assessment 1

1 Complete the following:

a) 725 dm = ...72.... m, ...5.... dm

b) In the opposite model, m = ...1,333....

m	
1,000	333

c) The number that comes just before 9,000,000 is ..8,999,999.

d) A rectangle has an area of 32 cm^2 and a width of 4 cm. Its perimeter is ....24.... cm.

2 Choose the correct answer:

a) 4 Milliards = ..400,000.. Ten Thousands

(400 or 4,000 or 40,000 or 400,000)

b) 3,425 + 4,768 – 193 = ...8,000.... (8,000 or 80 or 800 or 8)

c) A square has a side length S and perimeter P, the equation that represents the perimeter is ..P= 4 x S.. .

(P = S + S or P = S X S or P = S + 4 or P = 4 X S)

d) 2,500 centimeters = ...25.... meters (25 or 250 or 25,000 or 2,500)

3 Compare using (<, = or >):

a) The multiple of all numbers (<) The factor of all numbers

b) 6 min, 4 sec (>) 4 min, 6 sec

c) 240 X 100 (<) 600 X 400

d) Double of 8 (>) Triple of 5

4 Answer the following questions:

a If the price of one pen is 3 pounds, what is the price of 7 pens?

$3 \times 7 = 21$ pounds

b A rectangle is 6 cm long and 4 cm wide. Write an equation that shows the area of the rectangle, then find the area.

$A = 6 \times 4 = 24\ cm^2$

c Saleh has 15 apples and his sister Hala has 5 apples.

How many more times does Saleh have the same number of apples as Hala?

Equation: $15 = 5 \times m$

Answer: $15 \div 5 = 3$ times

d A person needs about 4 liters of water per day.

How many milliliters of water does a person need per day?

$4 \times 1{,}000 = 4{,}000$ mL

Assessment 2

1 Complete the following:

a The value of the variable in the equation: $X - 1{,}250 = 3{,}000$

is 4,250 .

b A garden is in the shape of a square whose sides are 10 meters, then its perimeter = 40 meter.

c 45 is 9 times as many as 5

d The GCF of 12 and 18 is 6 .

2 Choose the correct answer:

a The value of the digit 3 in the Hundred Millions place is **300,000,000**

(3 00 or 3,000 or 300,000 or [300,000,000])

b 613 – 247 = ... **366** .... (567 or 434 or [366] or 807)

c 5 X 50 = ... **25** .... X 10 (5 or [25] or 10 or 250)

d A number is 3 times greater than 7, then the number is .... **21** ....

(10 or 4 or [21] or 11)

3 Compare using (< , = or >):

a number of factors of 4 (=) number of factors of 9

b The multiple of all numbers (<) The factor of all numbers

c 240 (<) 6 x 400

d 84 L, 84 mL (>) 48 L, 48 mL

4 Answer the following questions:

a A water tank contains 500 liters of water. A family used 125 liters and 500 milliliters on one day and used 250 liters and 600 milliliters the other day. How much water is left in the tank?

Used water = 125,500 + 250,600 = 376,100 mL

Water left = 500,000 – 376,100 = 123,900

b Sameh's book is 30 cm long. The cover of Sameh's book has a perimeter of 100 cm. What is Sameh's book width?

100 ÷ 2 – 30 =20 cm

c If the price of one pen is 3 pounds, what is the price of 7 pens?

3 x 7 = 21 pounds

Assessment on Unit 7

First: **Choose the correct answer:**

1 The **rectangle area model** that represents "**23 X 8**" is ....

ⓐ

	2	3
8	8 X 2 = 16	8 X 3 = 24

ⓑ

	20	3
80	80 X 20 = 1,600	80 X 3 = 240

ⓒ

	2	30
8	8 X 2 = 16	8 X 30 = 240

ⓓ

	20	3
8	8 X 20 = 160	8 X 3 = 24

2 4 X (200 + 30 + 5) = 4 X ....

ⓐ 235 ⓑ 10 ⓒ 523 ⓓ 940

3 (5 X 7) + (5 X 30) + (40 X 7) + (40 X 30) = ... X ....

ⓐ 57 X 43 ⓑ 45 X 37 ⓒ 47 X 35 ⓓ 43 X 75

4 (8 X 6) + (8 X 20) + (8 X 100) = ... X ....

ⓐ 8 X 621 ⓑ 8 X 18 ⓒ 8 X 126 ⓓ 8 X 62,000

5 62 X 50 = ...

ⓐ (60 X 50) + (2 X 50) ⓑ (6 + 2) X 50

ⓒ 60 + 2 + 50 ⓓ 60 X 2 X 50

6 The following **rectangle area model** represents ....

X	30	7
30	900	210

ⓐ 3 X 37 ⓑ 3 X 307

ⓒ 30 X 37 ⓓ 30 X 307

7 The quotient of 157 ÷ 5 is between .... and ....

ⓐ 0 – 100 ⓑ 100 – 200 ⓒ 200 – 300 ⓓ 300 – 400

8 The number of digits of the quotient of 2,542 ÷ 6 is ....

ⓐ 1 ⓑ 2 ⓒ 3 ⓓ 4

9 The number that, if divided by 7, has a quotient of 24, and the remainder is 3, is ....

ⓐ 168 | [ⓑ 171] | ⓒ 72 | ⓓ 165

10 If the area of a rectangle is 104 cm^2, and its width is 8 cm, then its **length** is .... cm.

[ⓐ 13] | ⓑ 44 | ⓒ 832 | ⓓ 26

Second: Complete the following:

1 4,257 = 4,000 + 200 + ...**50**...... + ...**7**......

2 80 X 900 = ...**72,000**......

3 If 8 X 5 = 40, then 40,000 ÷ 8 = ...**5,000**......

4 6 X ......**5,000**...... = 30,000

5 The number that if divided by 8, the quotient will be 200 is ...**1,600**... .

6 The estimation of 32 X 24 is ......**30**...... X ......**20**...... = ...**600**...... .

7 The remainder of 49 ÷ 6 is ......**1**......

8 75 = (12 X ......**6**......) + 3

9 The quotient of 944 ÷ 4 is ......**236**...... .

10 800 X 30 = 24 X ......**1,000**......

Third: Use the rectangle area model strategy to solve the following problems:

1 78 X 3 **= 234**

	70	8
3	210	24

2 8 X 245 **= 1,960**

	200	40	5
8	1,600	320	40

3 40 X 234 **= 9,360**

	200	30	4
40	8,000	1,200	160

4 36 X 40 = 1,440

	30	6
40	1,200	240

5 92 ÷ 4 = 23

	20	3
4	20 X 4 = 80	3 X 4 = 12

92 – 80 = 12 – 12 = 0

6 849 ÷ 5 = 169 R4

	100	60	9
5	100 X 5 = 500	60 X 5 = 300	9 X 5 = 45

849 – 500
= 349 – 300
= 49 – 45 = 4

Fourth: **Use the multiplication/division partial algorithm to solve the following problems:**

1 98 X 6 = 588

```
    98
X    6
   540   (90 X 6)
+   48   (8 X 6)
   588
```

2 145 X 7 = 1,015

```
    145
X     7
    700   (100 X 7)
+   280   (40 X 7)
+    35   (5 X 7)
  1,015
```

3 80 X 315 = 25,200

```
     315
X     80
  24,000   (300 X 80)
+    800   (10 X 80)
+    400   (5 X 80)
  25,200
```

4 70 X 29 = 2,030

```
     29
X   706
  1,400   (70 X 20)
+   630   (70 X 9)
  2,030
```

5 72 ÷ 2 = 36

```
2 | 7 2 | 30
  – 6 0 |
    1 2 | 6
  – 1 2 |
      0 |
```

6 1,125 ÷ 5 = 225

```
5 | 1,125 | 200
  – 1,000 |
      125 | 20
    – 100 |
       25 | 5
     – 25 |
        0 |
```

Fifth: Use the **standard multiplication/division algorithm** to solve the following problems:

1. 6 X 29 = 174

```
    29
X    6
   ---
   174
```

2. 3 X 125 = 375

```
   125
X    3
   ---
   375
```

3. 96 X 7 = 672

```
    96
X    7
   ---
   672
```

4. 84 ÷ 6 = 14

```
     14
   ----
6 | 84
  - 6
   ---
    24
  - 24
   ---
    00
```

5. 981 ÷ 9 = 109

```
     109
   -----
9 | 981
  - 9
   -----
    081
  -  81
   -----
     00
```

6. 2,436 ÷ 4 = 609

```
     0609
   -------
4 | 2,436
  - 24
   -------
       36
  -    36
   -------
       00
```

Sixth: Use the **Distributive Property** to solve the following problems:

1. 7 X 45 = 7 X (40 + 5) = (7 X 40) + (7 X 5)
   = 280 + 35 = 315

2. 5 X 145 = 5 X (100 + 40 + 5)
   = (5 X 100) + (5 X 40) + (5 X 5)
   = 500 + 200 + 25 = 725

3 8 X 2,543 = 8 X (2,000 + 500 + 40 + 3)

= (8 X 2,000) + (8 X 500) + (8 X 40) + (8 X 3)

= 16,000 + 4,000 + 320 + 24 = 20,344

Seventh: Answer the following using the appropriate strategy:

a The school bus can accommodate **45** students. If the school has **5** buses, and each bus makes **two** trips in the morning, how many students can be transported by all **5** buses in the two trips?

The number of students

= 45 X 5 X 2 = 45 X (5 X 2)

= 45 X 10 = 450 students .

b Ahmed bought a car for **290,000** pounds, of which he paid **80,000** pounds as a down-payment, and the rest of the car's price will be paid in **7 equal** installments. How much is one installment?

The rest = 290,000 – 80,000 = 210,000 pounds

The value of each installment = 210,000 ÷ 7

= 30,000 pounds .

c April has **30** days. How many hours are there in this month?

The number of hours

= 30 X 24

= 720 hours .

d A charity association wants to distribute **3,168** pounds among **8** people. How much is the share of one person?

The share of each

= 3,168 ÷ 8

= 396 pounds .

Accumulative Assessments on Units 1 – 7

Assessment 1

1 Complete the following:

a The factors of 28 are 1 , 2 , 4 , 7 , 14 , 28 .

b 8 X 5,000 = 40,000

c 1,800 ÷ 5 = 360

d 44,349 = 40,000+4,000+300+40+9 *(In expanded form)*

2 Choose the correct answer:

a 60,000 = 60 Thousands (6 or 60 or 600 or 6,000)

b 45 + 0 = 45 *(Identity Element Property)*

(Distributive or Identity Element or Commutative or Associative)

c The value of x in the equation 200 + x = 62,340 is 62,140

(62,540 or 60,340 or 62,320 or 62,140)

3 Compare using (< , = or >):

a 23,023 mL (=) 23 L, 23 mL

b 20 Thousands (=) 500 X 40

c 0 x 5 x 400 (<) 5 x 4 x 3

d The number of factors of a composite number (>) The number of factors of a prime number

4 Answer the following questions:

a If the length of a bus is 1,280 centimeters, how long are 3 buses?

(Use the Distributive Property)

3 x 1,280 = 3 x (1,000 + 200 + 80) = (3 x 1,000) + (3 x 200) + (3 x 80)

= 3,000 + 600 + 240 = 3,840 cm

Assessment 2

1 Complete the following:

a) 7 + 6 = ...6...... + 7 "......Commutative...... Property"

b) 154 + 318 (*To the nearest 100*) ......200...... + ...300...... = ...500......

c) 600,000 grams = ...600...... kilograms

d) 1 X 6 = ...6......

2 Choose the correct answer:

a) The place value of the digit 7 in 251,475,253 is ...Ten Thousands...
(Thousands or Tens or Ten Thousands or Ten Millions)

b) 25 + 75 = 75 + 25 "Commutative Property"
(Distributive or Identity Element or Commutative or Associative)

c) Numbers 7 and 49 in correctly, ...7 is a factor of 49...
(7 is a multiple of 49 or 7 is a factor of 49 or 49 is a factor of 7 or 7 equals 9 times 49)

d) The common multiples of 2 and 3 together are multiples of the number ......6...... (5 or 7 or 8 or 6)

3 Compare using (< , = or >):

a) 20 X 50 (=) 8 X 125

b) 1,600 x 10 (=) 16 Thousands

c) 450 ÷ 5 (>) 350 ÷ 7

d) 25 X 0 (=) 4X (2 X 0)

4 Answer the following questions:

a The price of one pen is 90 piasters. How much are 20 pens?

The price of pens

= 90 x 20 = 1,800 piasters

b Hisham bought 7 kg of oranges, the price of one kilogram was 525 piasters. How much did Hisham pay for the oranges?

(Use the Distributive Property)

7 x 525 = 7 x (500 + 20 + 5) = (7 x 500) + (7 x 20) + (7 x 5)

= 3,500 + 140 + 35 = 3,675 piasters

c A train has 8 cars. If the number of seats in one car is 64, how many seats does the train have?

The number of seats

= 64 x 8 = 512 seats

Assessment on Unit 8

First: Choose the correct answer:

1. 302 X 20 = ...

   (a) 6,400 (b) 600 (c) 6,040 (d) 60,400

2. 5 + 5 X 5 − 5 = ...

   (a) 25 (b) 45 (c) 5 (d) 0

3. 6 X 5 X 3 + 2 = ...

   (a) 92 (b) 150 (c) 35 (d) 180

4. (36 ÷ 4) + 3 ÷ 3 = ...

   (a) 10 (b) 46 (c) 4 (d) 12

5. 48 ÷ (18 ÷ 3) + 4 = ...

   (a) 12 (b) 63,235 (c) 42,307 (d) 50,006

6. .... = 3

   (a) 3 + (2 X 4) (b) (13 − 4) ÷ 3 (c) 7 X (3 + 2) (d) 45 ÷ 2 − 2

7. (6 + 12) ÷ (3 − 2) = ...

   (a) 8 (b) 18 (c) 4 (d) 10

8. (9 + 6) X 2 ÷ 3 = ...

   (a) 13 (b) 15 (c) 20 (d) 10

9. 7 − 7 X 7 ÷ 7 = ...

   (a) 0 (b) 49 (c) 14 (d) 21

Second: Find the result:

1. 80 X 240 = 19,200
2. 92 X 5 = 460
3. 868 ÷ 7 = 124
4. 5,231 + 6,427 11,658
5. 78,029 − 32,171 = 45,858

Third: Complete using (<, = or >):

1. 100 X 40 (=) 50 X 80
2. 847 ÷ 7 (<) 655 ÷ 5
3. 5 + 5 X 8 (>) 5 X 5 + 8
4. 2,000 + 3,100 (=) 4,050 + 1,050

Fourth: Match:

1 10 X 100	a 153	(4)
2 5	b 9,000 ÷ 1,000	(5)
3 4 X (3 + 2) − 6	c (7 X 4) − 23	(2)
4 306 ÷ 2	d 14	(3)
5 9	e 20 X 50	(1)

Fifth: Complete the following:

1. The remainder of **97 ÷ 9** is 7 .
2. **If** 3 X 8 + a = 30, **then** a = 6 .
3. The number that if divided by **7**, the quotient will be **5** and the remainder is **4**, is 39 .
4. There are **21** boys and **24** girls in the class, their teacher wants to divide them into **5** groups.

   How many students will be in each group? 24 + 21 = 45 students.
   45 ÷ 5 = 9 students.

Accumulative Assessments on Units 1 – 8

Assessment 1

1 Complete the following:

a) 12 ÷ 4 + 15 ÷ 3 = **3 + 5** = **8**

b) If 40 ÷ 8 = 5 , 5 is called **quotient**

c) The only even prime number is **2**

d) 9 x n = 7 x 9, n = **7**

2 Choose the correct answer:

a) Six hundred and fifty million, thirteen thousand, five hundred, twenty-six *(In standard form)* = **650,013,526**

(605,130,516 or 605,013,516 or [650,013,526] or 6,513,516)

b) 56 + **98** = 54 + 100 (102 or [98] or 154 or 200)

c) 3 X 2 + 8 X 2 = **22** (23 or 24 or [22] or 32)

d) 5 X (400 + 3 + 70) = 5 X **473** (400,370 or 437 or [473] or 374)

3 Compare using (< , = or >):

a) 450 ÷ 5 (>) 350 ÷ 7

b) 18 X 5 (=) 6 X 3 X 5

c) 510 Hundreds (>) 20 Tens

d) 1 hour (<) 500 minutes

4 Answer the following questions:

The day is 24 hours, how many hours are there in a week?

24 x 7 = 168 hours

b) Find the GCF of 36 and 48.

Factors of 36 are 1 , 2 , 3 , 4 , 6 , 9 , 12 , 18 , 36

Factors of 48 area 1 , 2 ,3 , 4 , 6 , 8 , 12 , 16 , 24 , 48 **GCF = 18**

c Sara bought 3 meters of cloth for 189 pounds. What is the price of one meter of this cloth?

The price of one meter

$= 189 \div 3 = 63$ pounds

Assessment 2

1 Complete the following:

a (5 X 6) + (5 X 20) = 5 X ...... 26 ......

b The factors of 23 are ...... 1 ...... and ...... 23 ......

c 56 is 7 times ...... 8 ......

d ...... 200 ...... Hundreds = 400 X 50

2 Choose the correct answer:

a (4 X 1,000,000, 000) + (5 X 10,000,000) + (3 X 1,000,000) + (4 X 1,000) + (5 X 100) + (3 X 1) = ... 4,053,004,503 *(In standard form)*

(453,453 or [4,053,004,503] or 4,053,000,453 or 4,530,045,003)

b 0 + 215 = 215 " Identity Element *Property"*

([Identity Element] or Rounding or Associative or Distributive)

c If 40 ÷ 8 = 5 , then 8 is called ...... divisor ....

([divisor] or dividend or quotient or remainder)

d 24 ÷ 4 + 6 ÷ 3 = ... 8 ...... (4 or [8] or 19 or 2)

3 Compare using (< , = or >):

a 2,500 ÷ 5 (<) 45,000 ÷ 9

b Value of x in 3 x = 27 (<) value of x in x + 3= 30

c 9 – (5 – 2) (>) 9 – 5 – 2

d 23,023 mL (=) 23 L, 23 mL

4 **Answer the following questions:**

a 95 X 4 = (4 X 90) + (4 X 5) = 360 + 20 = 380

b A candy box contains 15 pieces. How many candy pieces in 9 similar boxes?

The number of pieces of candies
= 15 X 9 = 135 pieces

c Find the GCF of 10 and 15.

GCF = 5

d An apartment building has 20 floors. If each floor has 18 apartments, what is the total number of apartments in the building?

The total number of apartments
= 18 x 20 = 360 apartments

Final Revision

First: **Choose the correct answer:**

1. The value of the digit 7 in 125,357 is ....

   ⓐ 7 ⓑ 70 ⓒ 700 ⓓ 7,000

2. 3,400,003,025 = ...

   ⓐ 3 milliard + 400 million + 300 thousand + 25
   ⓑ 3 milliard + 4 million + 3 thousand + 25
   ⓒ 3 milliard + 400 million + 3 thousand + 25
   ⓓ 4 milliard + 300 million + 25 thousand + 3

3. 275 Millions = ...

   ⓐ 275 ⓑ 275,000
   ⓒ 275,000,000 ⓓ 200,070,005

4. The smallest 5-different-digit number is ....

   ⓐ 10,000 ⓑ 90,000 ⓒ 10,234 ⓓ 12,345

5. The largest number that can be formed from the digits 2, 7, 1, 0, 3 is...............

   ⓐ 30,217 ⓑ 70,321 ⓒ 73,210 ⓓ 10,237

6. 500 + 0 + 25 = ...

   ⓐ 500,025 ⓑ 5,025 ⓒ 525 ⓓ 50,025

7. 60 hundred Thousands = ...

   ⓐ 60,000 ⓑ 600,000 ⓒ 6,000,000 ⓓ 6,000

8. 4 million = ... Ten Thousands

   ⓐ 400 ⓑ 4,000 ⓒ 40,000 ⓓ 400,000

9. The smallest number formed from the digits (5, 6, 7, 2, 0, 8) is ....

   ⓐ 876,250 ⓑ 205,678 ⓒ 678,205 ⓓ 567,208

10 The number 35,200,810 in word form is ....

(a) thirty-five thousand, two hundred eighty-one

(b) thirty-five million, two hundred thousand, eight hundred ten

(c) three hundred fifty-two million, eight hundred ten

(d) thirty-five million, two thousand, eight hundred ten

11 (6 X 1,000,000,000) + (6 X 10,000,000) + (6 X 10,000) + (6 X 100) + (6 X 10) = ...

(a) 6,060,060,660 (b) 660,060,660

(c) 6,660,000,660 (d) 6,666

12 3,000,000,000 + 50,000,000 + 12,000 + 245 = ...

(a) 3,512,245 (b) 3,512,245

(c) 3,512,000,245 (d) 3,050,012,245

13 Three hundred five million, seven hundred thousand, sixteen =

....

(a) 350,716,000 (b) 350,700,016

(c) 305,700,160 (d) 305,700,016

14 The value of the digit in the Hundred Thousands place .... than the value of the digit in the Millions place.

(a) < (b) = (c) > (d) other

15 The smallest 9-digit number < ....

(a) One milliard (b) 100 million

(c) 999 thousand (d) 99 million

16 906,456 ≈ .... (To the nearest 100,000)

(a) 906,000 (b) 1,000,000 (c) 910,000 (d) 900,000

17 6,587 ≈ 6,600 (To the nearest ....)

(a) 10 (b) 100 (c) 10,000 (d) 1,000

18 The digit in the Hundred place in 3,910,472 is ....

ⓐ 1 ⓑ 2 ⓒ 4 ⓓ 9

19 Which digit can be placed in the circlet to make the mathematical expression correct? 6,201,351 > 6, 20◯,351

ⓐ 0 ⓑ 1 ⓒ 2 ⓓ 3

20 Which number could be rounded to 62,000,000 when rounded to the nearest 1,000,000?

ⓐ 6,061,470,000 ⓑ 62,703,147

ⓒ 61,901,478 ⓓ 622,000,000

21 (3 x 50,000) + (3 x 6,000) + (3 x 500) + (3 x 60) + (3 x 7) = ...

ⓐ 3 x 56,657 ⓑ 3 x 56,567

ⓒ 3 x 65,567 ⓓ 3 x 56,765

22 500 Ten Thousand = ... Millions

ⓐ 5,000 ⓑ 500 ⓒ 50 ⓓ 5

23 9 + 2 = 2 + 9 " .... Property"

ⓐ Identity Element ⓑ Commutative

ⓒ Associative ⓓ Distributive

24 (100 + 117) + 25 = 100 + (117 + 25) " .... Property"

ⓐ Identity Element ⓑ Commutative

ⓒ Associative ⓓ Distributive

25 45 + 0 = 45 " .... Property"

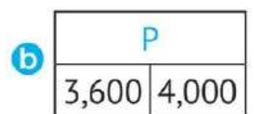
ⓐ Identity Element ⓑ Commutative

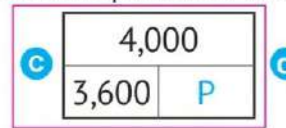
ⓒ Associative ⓓ Distributive

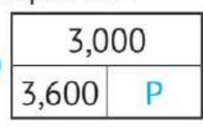
26 A store has 4,000 toys, and 3,600 toys are left. If P represents the number of sold toys, then which bar model represents this equation?

ⓐ

3,600	
4,000	P

ⓑ 

ⓒ 

ⓓ 

27 613 – 247 = ...

ⓐ 567 ⓑ 434 ⓒ 366 ⓓ 807

28 The additive identity is ....

ⓐ 1 ⓑ 0 ⓒ 10 ⓓ 60

29 The estimation of 6,563,235 using the Front-End Estimation strategy is.......................... .

ⓐ 6,000,000 ⓑ 6,500,000 ⓒ 6,600,000 ⓓ 7,000,000

30 13 + 45 = 45 + 13 , the property used is the .... Property.

ⓐ Associative ⓑ Commutative

ⓒ Additive Identity ⓓ Element d Zero

31 If 9 + X = 27, then X = ...

ⓐ 927 ⓑ 63 ⓒ 36 ⓓ 18

32 The best unit for measuring the height of a child is ....

ⓐ kilometers ⓑ meters ⓒ centimeters ⓓ millimeters

33 The best unit for measuring the length of an eraser is ....

ⓐ millimeters ⓑ centimeters ⓒ meters ⓓ kilometers

34 6,000 cm .... 600 m

ⓐ < ⓑ = ⓒ > ⓓ >

35 200,000 cm = ...

ⓐ 2 km ⓑ 20 m ⓒ 200 dm ⓓ 200 mm

36 The kilogram is the best unit for measuring the mass of a ....

ⓐ ruler ⓑ balloon ⓒ pencil ⓓ desk

37 The liter is a measurement unit of the ....

ⓐ weight ⓑ capacity

ⓒ mass ⓓ length

38 6,000 m = ... km

ⓐ 6000 ⓑ 600 ⓒ 60 ⓓ 6

39 4 m = ... cm

ⓐ 40 ⓑ 400 ⓒ 4000 ⓓ 4

40 3 dm = ... cm

ⓐ 3000 ⓑ 30 ⓒ 300 ⓓ 3

41 50,000 m = ... km

ⓐ 5 ⓑ 5000 ⓒ 500 ⓓ 50

42 5 kg = ... g

ⓐ 5,000 ⓑ 5 ⓒ 50 ⓓ 500

43 20 km = ... meters

ⓐ 2 ⓑ 200 ⓒ 2,000 ⓓ 20,000

44 8 + 12 = 12 + 8 " .... Property"

ⓐ Distributive ⓑ Commutative

ⓒ Associative ⓓ Additive Identity

45 13 liters and 30 mL = ... mL

ⓐ 1,330 ⓑ 13,030 ⓒ 43 ⓓ 3,013

46 8m, 14 dm = ... dm

ⓐ 814 ⓑ 13 ⓒ 94 ⓓ 49

47 8 hours = ... minutes

ⓐ 480 ⓑ 192 ⓒ 80 ⓓ 800

48 4 L + 4,000 mL = ... mL

ⓐ 8 ⓑ 8,000 ⓒ 4,400 ⓓ 4,000

49 6500 g = ... kg , ... g

ⓐ 65 kg , 0 g ⓑ 6 kg , 500 g ⓒ 6 kg , 5 g ⓓ 80 kg

50 6:30 + 20 min = ...

ⓐ 7 hours ⓑ 6:50 ⓒ 6:10 ⓓ 6

51 The suitable mass of a cat is ....

ⓐ 60 kg ⓑ 5,000 kg ⓒ 80 kg ⓓ 5 kg

52 7 km , 425 m = ... m

ⓐ 700,425 ⓑ 7,524 ⓒ 7,245 ⓓ 7,425

53 5 kilometers, 45 meters = ... meters

ⓐ 545 ⓑ 455 ⓒ 4,000,045 ⓓ 5,045

54 3 hours = ... minutes

ⓐ 120 ⓑ 180 ⓒ 100 ⓓ 240

55 A square has sides of 7 mm, its surface area .... mm^2 .

ⓐ 14 ⓑ 49 ⓒ 28 ⓓ 36

56 A square has a perimeter of 12 cm, then its area is .... cm^2.

ⓐ 48 ⓑ 9 ⓒ 36 ⓓ 144

57 The best unit for measuring the height of a school is ....

ⓐ kilometers ⓑ meters ⓒ centimeters ⓓ millimeters

58 The area of a square with a side length of 7 cm is ....

ⓐ 7 cm^2 ⓑ 14 cm^2 ⓒ 49 cm^2 ⓓ 343 cm^2

59 The area of a square is = ...

ⓐ 4 x S ⓑ S x S ⓒ L x W ⓓ (L + W) x2)

60 In a rectangle, the half perimeter is equal to ....

ⓐ the half area ⓑ L + w ⓒ (L + W) x 2 ⓓ 1

61 Perimeter of a square = ...

ⓐ S X S ⓑ L X W ⓒ 2L + 2W ⓓ S X 4

62 If a rectangle's length is L and its width is W, then its perimeter = ...

ⓐ L + W ⓑ L X W ⓒ (L + W) X 2 ⓓ (2 + L) + W

63 50 X .... = 2,000

ⓐ 4 ⓑ 40 ⓒ 400 ⓓ 4,000

64 7 X (3 X 5) = (...................... X 3) X 5

ⓐ 21 ⓑ 7 ⓒ 5 ⓓ 3

65 If 45 = 9 X a, then a = ...

ⓐ 54 ⓑ 45 ⓒ 9 ⓓ 5

66 A number is 3 times greater than 7, then the number is ....

ⓐ 10 ⓑ 4 ⓒ 21 ⓓ 11

67 The number 20 equals 5 times the number ....

ⓐ 4 ⓑ 5 ⓒ 15 ⓓ 25

68 If a X 31 = 31 X 9, then a = ...

ⓐ 3 ⓑ 8 ⓒ 9 ⓓ 31

69 If 6 × 7 = 42, then 42 is a .... of 6 and 7.

ⓐ multiple ⓑ factor ⓒ double ⓓ triple

70 Which equation would be best to include an explanation of the commutative Property of multiplication?

ⓐ 3 × 1 = 3 ⓑ 9 × 6 = 6 × 9

ⓒ 6 × [2 × 4] = [6 × 2] × 4 ⓓ 5 × 16 = [5 × 11] + [5 × 5]

71 2 × 3 × 4 = ...

ⓐ 234 ⓑ 9 ⓒ 24 ⓓ 10

72 9 x m = 36 , then m = ...

ⓐ 4 ⓑ 36 ⓒ 3 ⓓ 18

73 20 X 5 = 2 X ....

a 10 b 50 c 30 d 60

74 8 X 500 = 4 X ....

a 10 b 100 c 1,000 d 10,000

75 .... is a prime number.

a 64 b 15 c 17 d 21

76 The number that has only two factors is called a/an .... number.

a composite b prime c even d odd

77 A number whose all factors are (1 ,2 ,4 ,5 ,10 ,20) is ....

a 5 b 10 c 100 d 20

78 6 is a composite number because it has ....

a one factor only b two factors only

c more than two factors d no factors

79 .... is a factor of 8.

a 2 b 16 c 12 d 5

80 .... is the number that is a multiple of 2, 3, 4 and lies between 20 and 30.

a 24 b 26 c 28 d 45

81 16 has .... factors.

a 6 b 5 c 1 d 16

82 .... is a factor of 60.

a 10 b 6 c 2 d all of them

83 Which is NOT a common multiple of 9 and 6?

a 18 b 27 c 36 d 54

84 .... is a prime number.

a 16 b 11 c 15 d 18

85 The prime number is the number that has .... factor(s).

ⓐ 0 ⓑ 1 **ⓒ 2** ⓓ 3

86 The common factor of all numbers is ....

ⓐ zero **ⓑ 1** ⓒ 3,000 ⓓ 3

87 The greatest common factor (GCF) of 10 and 24 is ....

ⓐ 34 ⓑ 22 **ⓒ 2** ⓓ 14

88 5 has .... factor(s) only.

ⓐ 1 **ⓑ 2** ⓒ 3 ⓓ 4

89 The common multiples of 2 and 3 together are multiples of the number

ⓐ 5 ⓑ 27 ⓒ 8 **ⓓ 6**

90 .... is a factor of 72.

ⓐ 5 **ⓑ 9** ⓒ 7 ⓓ 11

91 If $600 \div 10 = 60$ then the divisor is ....

ⓐ 1 **ⓑ 10** ⓒ 60 ⓓ 600

92 If $40 \div 8 = 5$, then 5 is called ....

ⓐ divisor ⓑ dividend **ⓒ quotient** ⓓ remainder

93 Which of the following equations represents the opposite division problem?

$$\begin{array}{r|l} & 73 \\ \hline 5 & 365 \end{array}$$

ⓐ 73 X 5 = 365 ⓑ 365 × 73 = 5

ⓒ 365 ÷ 5 = 73 ⓓ 73 ÷ 365 = 5

94 5 X (400 + 3 + 70) = 5 X ....

ⓐ 400,370 ⓑ 437 **ⓒ 473** ⓓ 374

95 805 X .... = 3,220

ⓐ 4 ⓑ 6 ⓒ 7 ⓓ 10

96 If $8 + X = 3 \times 8$, then X = ...

ⓐ 3 ⓑ 8 **ⓒ 16** ⓓ 12

97 (4 X 5) + (4 X 20) + (30 X 5) + (30 X 20) = ... X ....

a 43 X 52   **b 34 X 25**   c 42 X 35   d 32 X 45

98 3 X 2 + 8 X 2 = ...

a 23   b 24   **c 22**   d 32

99 3,200 ÷ 4 .... 8,000 ÷ 8

a >   b =   **c <**   d ⩾

Second: Complete the following:

1. 25 Millions + 250 Thousands + 200 = **25,250,200**.
2. 7,000,021 = **7** Millions + **0** Thousands + **21**
3. 77,002,205 is read as: **seventy-seven million, two thousand,two hundred five**
4. The digit **9** in 922,157,528 is in the Hundred Millions place.
5. 600,000 = 10 times of **60,000**
6. The number of hundreds in one million is **10,000**
7. 4,000,000,000 + 6,000,000 + 20,000 + 300 + 20 + 6 = **4,006,020,326** .
   (In standard form)
8. The number 5,005,050,500 = **Five milliards, five millions, fifty thousand, five hundreds** (In word form)
9. 5,768,125,345 ≈ **5,768,130,000** (To the nearest Ten Thousand)
10. 4,545 ≈ **5,000** . (To the nearest 1,000)
11. 89,541 ≈ **90,000** . (To the nearest 10,000)
12. 30,441,085 ≈ 30,400,000 (Rounded to the nearest **hundred thousand**)
13. Million is the smallest number formed from **7** -digits.
14. The greatest number can be formed from the digits 3, 6, 5, 4, 8, 2 and 9 is **9,865,432**
15. 80,503,004 = 80,000,000 + **3,000** + 500,000 + **4**

16 (13 x 100,000) + (4 x 10,000) + (18 x 100) + (6 x 1) in standard form is ...1,341,806...

17 (85 + 48) + 52 = ...85...... + (48 + 52) "...associative Property"

18 9,845,122 – ......9,745,122...... = 100,000

19 The additive identity is ......zero......

20 The multiplicative identity is ......1......

21 The value of x in the equation 200 + x = 62,340 is ....62,140......

22 In the opposite bar model, the value of b = ...10,901....

b	
9,901	1,000

23 80 km, 60 m = ...80,060...... m

24 A liter is a measurement unit of ....capacity..... .

25 A kg is a measurement unit of ....mass..... .

26 A hour is a measurement unit of ....time.......... .

27 A jug of 10 liters of water. How many milliliters does it have ? ...10,000...

28 3 liters, 500 milliliters = ...3,500..... milliliters

29 3 hours = ...180........ minutes

30 95 minutes = ...1........ hours and ....35........ minutes

31 A box has a mass of 5 kg and 700 g, then its mass in grams = ...5,700... g.

32 5 hr, 40 minutes = ...340.......... minutes

33 4:48 + 34 minutes = ...5...... : ....22....

34 8 : 15 + 3 : 50 = ..12:05..

35 Two weeks and three days = ...17........ days

36 A rectangle is 10 cm long and 5 cm wide, then its area = ...50.... cm^2

37 The perimeter of a square whose side length is 1 cm equals ....4...... cm.

38 If a rectangle's width is 4 cm and its length is 6 cm, then its area is ....24.............. cm^2

39 A square has a side length of 4 meters, then its area is ....16........ m^2

40 If the perimeter of a square is 24 m,
then its side length is = ...6.......... m.

41 If the area of a rectangle = 24 cm^2 , and its length = 6 cm,
then its width = ...4..... cm.

42 If the length of a rectangle is (L) and its width is (W), then the formula of the perimeter of this rectangle is (W + L) X 2

43 If the area of a square is 25 cm^2, then its perimeter is ...20... cm

44 5 times greater than 3 is b . Equation: .....5 X 3 = b.......

45 a is 4 times as many as 9. Equation: ..a = 4 X 9..

46 The number which has only two factors and its sum equals 12 is 11

47 The GCF of 7 and 21 is ....7.......

48 The number 9 has .....3..... factors.

49 Any number is a multiple of itself...

50 ....1..... is a factor of all number

51 The numbers 1 , 3 , 9 , 27 are all factors of ...27....

52 The factor pair 3 and 8 is for the number ....24...

53 If b X 5 = 35, then b = ...7..............................

54 If e = 8 X 6, then e = ...48......................

55 If 28 = 4 X m , then m = ...7..........................

56 If 3 x = 18 , then x = ...6......................

57 564 X 1,000 = 564,000

58 ....17........... X 100 = 1,700

59 38 ÷ 6 = ...6..... R2

60 60 X 5,000 = 300,000

61 10 X 6 X 8 = (..6.. X ..8...) X ..10.. = ..48.. X ..10.. = ..480....

62 (25 X ....18.......) x 16 = ...25.......... X (18 x 16)

63 If 5 X 8 = 40, then 4,000 ÷ 5 = ...800........

64 The value of 30 – 4 X (4 + 2) = ...6............

65 (10 + 80) ÷ 3 – 20 = 30 – 20 = ...10......

Third: **Answer the following:**

1 Write the numbers in an ascending order:

8,092,561 , 9,208,111 , 7,534,786 , 8,650,336

7,534,786 , 8,092,561 , 8,650,336 , 9,208,111

2 List the following lengths in an ascending order.

7 m , 7,000 cm , 7 km , 7 mm

7 mm , 7 m , 7,000 cm , 7 km

3 Round 572,621 :

ⓐ to the nearest hundred: 572,600

ⓑ to the nearest hundred thousand: 600,000

4 A colony of ants eats approximately 2,000 grams of food each day. if the ants have 10 kilograms of food stored,

How many days will the food last ?

The number of days = 10,000 ÷ 2,000 = 5 days

5 A primary school with 1,028 student 542 of them are girls.

How many boys are there in this school?

Number of boys = 1,028 – 542

= 486 boys

6 A road of 800 km length. If a train traveled a distance of 675 km from this road, what is the remaining distance of the road?

The remaining = 800 – 675

= 125 km

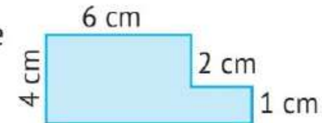
7 A bridge of ants consists of 142 ants and another bridge consists of 165 ants. How many ants in the two bridges together?

The number of ants = 142 + 165

= 307 ants

8 In the following equation A + 125 = 300 , find the value of A

A = 300 – 125 = 175

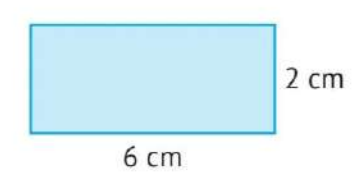


9 Sameh's book is 30 cm long. The cover of Sameh's book has a perimeter of 100 cm. What is Sameh's book width?

20 cm

10 Calculate the area of the following complex shape

(Show your work area The area = 26 cm^2



11 A squared room its side is 6 meters. What is the perimeter of the room?

$\frac{1}{2}$ P = P ÷ 2 = 100 ÷ 2 = 50 cm

Book width = 50 – 30 = 20 cm

12 Find the area and perimeter of the following:

2 cm

6 cm

A = 6 X 2 = 12 cm^2

P = (6 + 2) X 2 = 16 cm

13 A rectangular gymnasium is 7 meters long and 4 meters wide. Find its perimeter.

P = (7 + 4) X 2 = 22 cm

14 fish tank with a capacity of 50 liters is filled with 20,000 milliliters of water. How many more liters of water are needed to fill it up completely ?

Capacity of water = 50,000 – 20,000 = 30,000 ml = 30 L

15 Ola started work at 12:15 pm, and finished her work at 2:30 pm .

How much did Ola spend at work?

Old spend: two hours and 15 minutes

16 A bus leaves for Cairo at 4:30 P.M. It takes 1 hr, 25 min. to reach there. at what time will it reach at Cairo?

It will reach Cairo at: 4:30 + 1:25 = 5:55

17 In the opposite bar model, the value of the unknown y

9,232	
3,232	y

y = 9,232 – 3,232 = 6,000

18 Amira ate 2 apples, and Ahmed ate 5 times as many.

How many apples did Ahmed eat?

Amira ate = 5 X 2 = 10 apples

19 An ant works from 6:50 am to 10:58 am. How long does the ant work?

The time = 10:58 + 6:50 = 4:08

20 Farida bought a bottle of milk of capacity 3 liters and drank from it 1,500 mL.

How many liters are left?

The milk left = 3,000 – 1,500 = 1,500 mL

one liter and half

21 Murad has 3,256 pounds, and Farida has 2,804 pounds.

What is the difference between their money?

The difference = 3,256 – 2,804 = 452 pounds

22 Mahmoud saved 250,000 piasters and got 39,000 piasters from his father. What is the sum of Mahmoud's money?

The sun of money = 250,000 + 39,000 = 289,000 PT

23 Find 4 multiples of the number 9

9 , 18 , 27 , 36

24 Ahmed bought 3 pens. If the price of one pen is 100 pounds, what is the price of all pens?

The price of pens = 3 X 100 = 300 pounds

25 Find the product of

a) 128 × 3 [by any way]

b) 784 ÷ 7 [by any way]

a) 384 b) 112

26 Sara traveled 9 days continuously. She traveled 5,000 meters each day. How many kilometers did she walk in all?

The distance = 5 X 9 = 45 km

27 Use the associative property of multiplication to get the result of:

2 x 5 x 14

(2 X 5) X 14 = 10 X 14 = 140

28 Use any strategy you prefer to find 455 ÷ 3:

455 ÷ 3 = 151 R2

29 There are 48 mugs that need to be put in boxes and shipped. Eight mugs can fit in each box. How many boxes will be needed to ship the mugs ?

The number of boxes = 48 ÷ 8 = 6 boxes

30 There are 72 children in the park. They want to make teams with 8 children in each team. How many teams will they make?

The number of teams = 72 ÷ 8 = 9 teams

31 A wall of length 16 meters long was divided into 8 parts, Find the length of each part in cm.

Length of each part = 16 ÷ 8 = 2 m = 200 cm

32 8 people participated in an exhibition and each one of them won 235 pounds, how much did they all win ?

They win = 8 X 235 = 1,880

33 Ants walk about 5,000 meters every day. How many meters ants walk in 6 days ?

The distance = 5,000 X 6 = 30,000 m

34 Find the GCF of 16,20

Factors of 16 are 1 , 2 , 4 , 8 , 16

Factors of 20 are 1 , 2 , 4 , 5 , 10 , 16

Common factors are 1 , 2 , 4

GCF = 4

35 Write all factors of the number 36, then decide if the number is a prime or composite

1 , 2 , 3 , 4 , 6 , 9 , 12 , 18 , 36

it is a compsite number

36 Find the GCF between 24 and 12

12 = 1 , 2 , 3 , 4 , 6 , 12

24 = 1 , 2 , 3 , 4 , 6 , 8 , 12 , 24 GCF = 12

37 Solve using the order of operations: $13 + 36 \div 4$

13 + 9 = 22

38 Write all the factors of the number 18.

1 , 2 , 3 , 6 , 9 , 18

39 Solve using the order of operations: $67 + 3 - 4 \times 5$

67 + 3 - 20

= 70 – 20 = 50

40 Solve using the order of operations: $7 + [12 - 6] + 2$

7 + 6 + 2

13 + 2 = 15

Model Exams

Cairo Governorate - Al Basatin Educational Zone

First: **Choose the correct answer:**

1. 40 is 8 times the number ...5.... (4 or [5] or 6 or 7)
2. If 4,010 ÷ 100 = 40 R 10, then the divisor is ...100.... (4,010 or [100] or 40 or 10)
3. The area of a rectangle of length 4 m, and width 6 m is ...24... m^2. (10 or 16 or 20 or [24])
4. The smallest prime number is ...2.... (0 or 1 or [2] or 3)
5. The product of 30 x 15 = ...450.... (4,500 or [450] or 5,400 or 540)
6. The digit in the Ten Thousand place in 8,632,471 is ...3... (2 or [3] or 6 or 8)
7. 3 kilometer, 12 meter = ...3,012... meters. (312 or [3,012] or 30,012 or 3,120,000)

Second: **Complete the following:**

1. 40 ÷ (9 - 5) + 2 = ...12...
2. The perimeter of a square with side length of 9 cm is ...36... cm.
3. The value of the symbol "a" in the equation: a - 2,500 = 5,000 is ...7,500...
4. 4,568 - 3,213 = ...1,355...
5. 5 liter = ...5,000... milliliters
6. The multiplicative identity element is ...1....
7. 6,000 grams = ...6... kilograms
8. The area of a square of side length 6 cm is ...36... cm^2

Third: Choose the correct answer:

1. 10 minutes, and 13 seconds = **613** seconds. (130 or 113 or [613] or 6,130)
2. The value of the digit 8 in 7,854,362 is **800,000**.
   (8,000,000 or [800,000] or 80,000 or 8,000)
3. 464 ÷ 4 = **116** ([116] or 216 or 316 or 416)
4. The number 19 million, 568 thousand, 742 is written in the standard form as **19,568,742**
   (19,568,000 or 19,742,568 or [19,568,742] or 19,000.7 42)
5. (12 X 13) X 20 = 12 X (13 X 20) represents **associative** property
   (commutative or [associative] or distributive or identity)
6. **5** is a factor of 25. (2 or 3 or 4 or [5])
7. Rounding the number 5,231 to the nearest Hundred is **5,200**.
   (5,300 or [5,200] or 5,230 or 5,240)

Fourth: Answer the following:

1. Find the greatest common factor (GCF) of 12 and 18.

12	
1	12
2	6
3	4

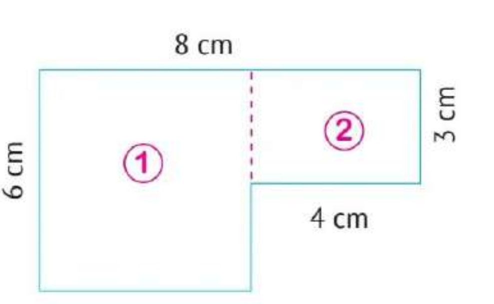
18	
1	18
2	9
3	6

GCF is **6**

2. Write 4 multiples of 10 : **20** , **30** , **40** , **50**
3. A bridge of ants consists of 1,523 ants, and another bridge consists of 1,346 ants. How many ants are there in the two bridges together?

The number of ants = 1,523 + 1,346 = 2,869 ants

4 Find the area of the opposite figure.



Area of rectangle (1) = 6 X 4 = 24 cm^2

Area of rectangle (2) = 4 X 3 = 12 cm^2

Area of the figure = 24 + 12 = 36 cm^2

Giza Governorate - El Ayyat Educational Zone 2

First: Choose the correct answer:

1 423 X 4 = 1,692 (1,060 or [1,692] or 8,240 or 6,061)

2 497 ÷ 7 = 71 (17 or 1 or [71] or 5)

3 The standard form of the number 6 milion and four is 6,000,004

([6,000,004] or 4,006,000 or 6,400,000 or 6,400,004)

4 The number of factors of the number 8 is 4 (2 or 3 or 1 or [4])

5 If the side length of a square is 8 cm, then its area is 64 cm^2

(46 or [64] or 16 or 32)

6 When rounding the number 3,980 to the nearest Thousands is 4,000

([4,000] or 5,000 or 3,900 or 3,000)

7 14 liters = 14,000 mL (1,400 or [14,000] or 14 or 140)

Second: Complete the following:

1 The GCF for two numbers 14 and 21 is 7.

2 29 ÷ 4 = 7 R 1

3 8 X 300 = 2,400

4 162,000 = 1,620 Hundreds

5 5 weeks = 35 days

6 2 X 5 X 3 = 10 × 3

7 All factors of 35 are 1,5,7,35.

8 The common factor of all numbers is 1.

Third: **Choose the correct answer:**

1 25 +15 = 15 + 25 is called commutative Property.

(commutative or associative or identity or zero)

2 Which is a multiple of 5? 50 (26 or 57 or 50 or 2)

3 27 ÷ 3 = 9, the divisor is 3 (3 or 27 or 9 or 8)

4 The only even prime number is 2. (1 or 3 or 4 or 2)

5 The value of the digit 6 in 613,210 is 600,000.

(600,000 or Hundred Thousand or 60 or 600)

6 If B + 215 = 715 then B = 500 (485 or 500 or 854 or 548)

7 A rectangle with 4 cm width and 6 cm length, then its area is 24.

(10 or 24 or 25 or 27)

Fourth: **Answer the following:**

1 Arrange from the least to the greatest:

537,400 - 374,300 - 745,300 - 753,400

374,300 – 537,400 – 745,300 – 753,400

2 Using the opposite bar model, find the value of k

k	
7,402	5,310

k = 7,402 + 5,310 = 12,712

3 Solve using the order of operations: 13 + 36 ÷ 4

13 + 36 ÷ 4 = 13 + 9 = 22

4 Ali bought 12 kg of apples for L.E 9 a kilogram. Find the money he paid?

Ali paid = 12 X 9 = 108 LE

Giza Governorate - El Dokky Educational Zone

3

First: Choose the correct answer:

1. The smallest prime number is ....**2**.... (0 or 1 or 2 or 3)
2. 2 X 3 - 4 = ...**2**.... (6 or 4 or 1 or 2)
3. 2 days and 2 hours = ...**50**.... hours (24 or 26 or 48 or 50)
4. In 150 ÷ 3 = 50 , the divisor is ....**3**.... (150 or 3 or 50 or 10)
5. 6 has ....**4**.... factors (2 or 3 or 4 or 5)
6. 18 is 6 times the number ....**3**.... (2 or 3 or 4 or 5)
7. The place value of the digit 5 in 2,572,643 is **Hundred Thousands**
   (Milliards or Millions or Hundred Thousands or Tens)

Second: Complete the following:

1. The additive identity element is ....**0**....
2. 27 X ....**0**.... = 0
3. The multiple of all numbers is ....**0**....
4. Million is the smallest number formed from ....**7**.... digits.
5. The value of the digit 8 in 2,458,462,230 is **8,000,000**.
6. 25 - 6 X 2 = ...**13**....
7. 9,000 grams = ...**9**.... kilograms
8. 3 liters and 2,540 mL = ...**5,540**.... mL

Third: Choose the correct answer:

1. 1 min + 20 seconds = ...**80**.... seconds (1200 or 80 or 32 or 320)
2. 515 ÷ 5 = ...**103**.... (11 or 13 or 103 or 111)
3. 645 - m = 523, then m = ...**122**.... (222 or 122 or 168 or 365)

4 A square picture with side length of 5 cm , then its area = ...**25**.... cm^2

(10 or 25 or 20 or 9)

5 4,890 ≈ ....**4,900**.... to the nearest Hundreds

(4,900 or 4,000 or 5,990 or 5,000)

6 5 meters = ...**500**.... cm (50 or 500 or 5000 or 50000)

7 24 X 15 = 15 X 24 (**Commutative**... property)

(distribution or associative or commutative or multiplication identity)

Fourth: Answer the following:

1 Find the greatest common factors (GCF) of 12 and 18

Factors of 12 are : 1,2,3,4,6,12 **Factors of 18 are : 1,2,3,6,9,18**

Common factors are : 1,2,3,6 **GCF = 6**

2 Omar walks about 6 km every day. How many kilometers does Omar walk in week?

The number of kilometers = 6 X 7 = 42 km

3 Find the product of 75 X 3

75 X 3 = 225

4 Find the area and perimeter of the following

A = **6 X 2 = 12 cm^2**

P = **(6 + 2) X 2 = 16 cm**

2 cm

6 cm

Giza Governorate - Imbaba Educational Zone

4

First: Choose the correct answer:

1. The population of a country is 56,403,478, then the place value of the digit 5 is **Ten millions**....
   (Millions or Milliards or Ten Millions or Hundred Thousands)
2. The smallest prime number is **2**. (0 or 1 or 2 or 3)
3. A rectangle with a length of 8 cm. and width of 5 cm, then its area is **40** cm^2 (13 or 26 or 62 or 40)
4. **24** is 4 times 6. (10 or 24 or 20 or 2)
5. If 525 ÷ 5 = **105** (101 or 15 or 501 or 105)
6. 7 L and 77 mL = **7,077** mL (777 or 7077 or 7770 or 7700)
7. The common multiple of all numbers is **0**. (0 or 1 or 2 or 5)

Second: Complete the following:

1. The multiplicative identity is **1**.
2. A square of side length of 6 cm, then its perimeter = **24** cm.
3. Twenty million, twenty thousand, and twenty in the standard form is **20,020,020**.
4. 1 days and 2 hours = **26** hours
5. A rectangle with length of 7 cm and width of 4 cm, then its area = **28** cm^2
6. If 2,000 - x = 1,300, then x = **700**
7. The factors of number 6 are **1 , 2 , 3 , 6**
8. 34 X 75 = 75 X **34**

Third: Choose the correct answer:

1. ....42.... is a multiple of 7. (12 or 42 or 36 or 72)
2. 124 ÷ 4 = ...31.... (31 or 13 or 101 or 301)
3. 5 is a factor of ....55.... (55 or 53 or 36 or 12)
4. 30 - 4 X (2 + 1) = ...18.... (18 or 108 or 78 or 102)
5. 56,349 ≈ ....56,300.... to the nearest Hundred.

   (5,635 or 5,630 or 56,340 or 56,300)
6. 8 X 35 = (8 X 5) + (8 X ....30....) (3 or 30 or 24 or 10)
7. Square with a side length of 7 cm, then its area = ...49.... cm^2

   (14 or 28 or 49 or 47)

Fourth: Answer the following:

1. A square shaped room of side length 5 m. Find the area of the ground room.

   Area of the ground = 5 X 5 = 25 m^2
2. Find the GCF of 20 and 16

   Factors of 20 are 1 , 2 , 4 , 5 , 10 , 20

   Factors of 16 are 1 , 2 , 4 , 8 , 16

   Common factors are 1 , 2 , 4

   GCF is 4
3. Find: 246 ÷ 3

   246 ÷ 3 = 82
4. Muhammad has 1,200 minutes in charge of his mobile calls. If he consumed 7 minutes. Find the remaining minutes with Muhammad?

   The remaining minutes = 1,200 – 7 = 1,193 minutes

Alexandria Governorate - El Montzah Educational Zone

First: Choose the correct answer:

1. In the equation 48 ÷ 6 = 8, the divisor is ...**6**... (48 or 6 or 8 or 4)
2. A square of side length 3 cm, its perimeter = ...**12**... cm. (3 or 6 or 4 or 12)
3. 18+ 10 = 10 + 18 (...**Commutative**... property)
   (commutative or associative or additive identity or distributive)
4. The value of digit 7 in 2,476,236 is ...**70,000**...
   (7 or 70 or 700 or 70,000)
5. ...**4**... is a factor of 16. (4 or 5 or 30 or 10)
6. 9 + 6 ÷ 2 = ...**12**... (9 or 6 or 12 or 8)
7. 220 ÷ 2 = ...**110**... (2 or 110 or 10 or 1)

Second: Complete the following:

1. The common factor of all numbers is ...**1**....
2. 3 liters = ...**3,000**... milliliters
3. 68,621 $\approx$ ...**69,000**... (to the nearest Thousands)
4. If 632 X 2 = 1,264, then 1,264 ÷ 2 = ...**632**...
5. Two weeks and 3 days = ...**17**... days
6. The perimeter of the rectangle of 5 m length and 3 m width = ...**16**... m
7. 20 X 60 = ...**1,200**...
8. A square its perimeter 8 cm, then its area is ...**4**... cm^2

Third: Choose the correct answer:

1. The smallest prime number is ...**2**... (0 or 1 or 2 or 3)
2. 26 dm = ...**260**... cm (26 or 260 or 2,600 or 26,000)

3 73 X ......100...... = 7,300 (10 or [100] or 1000 or 1)

4 A rectangle its length 8 cm, its width 6 cm, then its area ......48...... m^2

([48] or 16 or 11 or 29)

5 The standard form of the number 5 million, 8 thousand, 4 ...5,008,004

([5,008,004] or 50,804 or 584 or 508,004)

6 352 + (236 + 421) = (352 + ...236......) + 421 (352 or [236] or 421 or 782)

7 The value of the variable in the equation b + 1,000 = 3,000 is ...2,000...

(1,000 or [2,000] or 3,000 or 3)

Fourth: Answer the following:

1 Find GCF for 9 and 12

Factors of 9 are 1 , 3 , 9

Factors of 12 are 1 , 2 , 3 , 4 , 6 , 12

Common factors are 1 , 3

GCF is 3

2 In the opposite bar model, the value of the unknown y.

y = 9,232 – 3,232 = 6,000

9,232	
3,232	y

3 A factory produced 6,823 lamps in one week, the next week, the factory produced 5,258 lamps. How many lamps were produced in the two weeks?

The number of lamps = 6,823 + 5,258 = 12,081 lamps

4 In the opposite figure: Find the value of x

x = 20 ÷ 5 = 4 cm

5 cm

Area = 20 cm^2

x cm

Alexandria Governorate - East Educational Zone

First: Choose the correct answer:

1. Which of the following numbers is a multiple of 9? (**45** or 89 or 61 or 19)
2. 3 X 2 + 8 X 2 = ...**22**... (16 or **22** or 32 or 23)
3. The perimeter of a rectangle with two dimensions 3 cm, 7 cm = ...**20**... cm. (34 or 17 or **20** or 21)
4. Area of square = ...**S X S**... (**S X S** or L + W or L X W or S X 4)
5. 2,000 m = ...**2**... km (20 or **2** or 200 or 2000)
6. 6 X 3 = 3 X 6 (...**Commutative**... property) (associative or **commutative** or additive identity or none of the above)
7. 37,980 ...**>**... 37,890 (< or **>** or = or ≤)

Second: Complete the following:

1. The opposite model represents the product 4 X 25, then the missing value in the model is ...**80**...

	20	5
4	....	20

2. The perimeter of a square its side length is 7 m, is ...**28**... m.
3. The smallest prime number is ...**2**...
4. 32 Thousands = ...**320**... Hundreds
5. 23,640 + 14,635 = ...**38,275**...
6. 700,000 + 30,000 + 100 + 50 + 4 = ...**730,154**... (Standard form)
7. 35 is ...**5**... times the number 7
8. If 263 + b = 572, then b = ...**309**...

Third: Choose the correct answer:

1. Rounding the number 34,689 to the nearest Thousands is ......35,000......
(30,000 or 35,000 or 34,600 or 34,700)

2. If x + 24 = 56, then x = ...32......
(80 or 24 or 32 or 56)

3. The place value of digit 6 in 6,054,033 is ......Millions......
(Ten Thousands or Millions or Thousands or Hundreds)

4. ......6...... is a factor of 24.
(30 or 25 or 6 or 5)

5. 30 m = ...3,000...... cm.
(30 or 300 or 3,000 or 30,000)

6. 62 ÷ 5 = 12 R 2, the dividend is ......62......
(62 or 5 or 12 or 2)

7. 7 + 7 + 7 = 7x ......3......
(3 or 24 or 30 or 8)

Fourth: Answer the following:

1. Find the area of the opposite shape?

7 cm

2 cm

Area = 7 X 2 = 14 cm^2

2. Sara bought 8 kg of apples for 50 LE each. Find the money which she paid?

Sara paid = 8 X 50 = 400 LE

3. Find the result of 875 ÷ 5

875 ÷ 5 = 175

4. Find the greatest common factor of 12 and 15

Factors of 12 are 1 , 2 , 3 , 4 , 6 , 12

Factors of 15 are 1 , 3 , 5 , 15

Common factors are 1 , 3

GCF is 3

Al Behira Governorate - Damanhour Educational Zone

First: Choose the correct answer:

1. 30 X 40 = ...1,200... (700 or 120 or 1,200 or 70)
2. 422,012 [<] 400,000 + 20,000 + 3,000 +20 + 1 (< or > or = or ≤)
3. 15 ÷ 3 + 2 = ...7... (3 or 5 or 7 or 20)
4. 3m and 50 cm = ...350... cm. (300 or 350 or 530 or 3,500)
5. The area of a square whose side length is 6 cm = ...36... cm^2. (12 or 18 or 24 or 36)
6. If 600 ÷ 10 = 60, then the dividend is ...600... (0 or 10 or 60 or 600)
7. The smallest number formed from: (6,1,2,0,3,5) is ...102,356... (653,210 or 102,536 or 102,356 or 123,560)

Second: Complete the following:

1. 160 = ...16... Tens
2. 7,000 gm = ...7... kg.
3. In the opposite bar model, the value of H = ...1,200...

H	
700	500

4. The side length of the square = its perimeter ÷ ...4...
5. A week and two days = ...9... days.
6. 7,839 ≈ ...7,840... (to the nearest 10)
7. If the area of a rectangle is 50 m^2, and its length is 10 m, then its width ...5... m.
8. The opposite model represents the product of : 7 X 36, then the missing value in the model is ...42... .

	30	6
7	210	......

Third: Choose the correct answer:

1. 21 X 4 = ...84........ (84 or 123 or 153 or 64)
2. The value of the digit 6 in 2,605,412 is ....600,000.... (6,000 or 60,000 or 600,000 or 6,000,000)
3. The prime number that comes just after 11 is ..13.. (12 or 13 or 14 or 17)
4. (2 X 3) X 4 = 2 X (........3........ X 4) (0 or 1 or 3 or 6)
5. 24 is a multiple of ....2........ (2 or 5 or 7 or 9)
6. The perimeter of a rectangle whose length is 8 cm, width 5 cm = ...26........ cm. (12 or 26 or 30 or 40)
7. The number 20 equals 5 times the number ....4.... . (4 or 5 or 15 or 25)

Fourth: Answer the following:

1. If the population of New Valley is 256,088 people and the population of South Sinai is 108,951 people. Find the difference between the population of New Valley and the population of South Sinai?

   The difference = 256,088 – 108,951
   = 147,137 people

2. A fish tank with a capacity of 50 liters is filled with 20,000 millilitres of water. How many more liters of water are needed to fill it up completely?

   20,000 mL = 20,000 ÷ 1,000 = 20 L
   The number of liters needed = 50 – 20 = 30 L

3. Find the GCF of 25 and 35

   Factors of 25 are .... 1 , 5 , 25
   Factors of 35 are .... 1 , 5 , 7 , 35
   Common factors are .... 1 , 5
   The GCF is 5

4 A train has 784 seats for passengers. If there are 7 cars on the train and each car has the same number of seats, how many passengers can sit in each car?

The number of passengers

= 784 ÷ 7 = 112 passengers

Al Sharqiya Governorate - Faqous Educational Zone 8

First: **Choose the correct answer:**

1 The value of the digit 6 in 76,001,405 is **6,000,000**

(6,000 or 600,000 or 6,000,000 or 6)

2 725,225 ≈ **730,000** (round to the nearest Ten Thousands)

(725,000 or 720 or 730,000 or 725,230)

3 The multiplicative identity element is **1**. (0 or 1 or 2 or 10)

4 5 Kg , 80 gm = **5,080** gm (5,800 or 580 or 8,050 or 5,080)

5 256 + 75 = 75 + 256, **commutative** property is used.

(additive identity or commutative or associative or distributive)

6 100 - 40 X 2 = **20** (20 or 120 or 62 or 280)

7 The common factor of all numbers is **1**. (0 or 1 or 2 or 3)

Second: **Complete the following:**

1 1,625 cm = **16** m + **25** cm

2 **2** is the only even prime number.

3 5 X 400 + 5 X 60 + 5 X 7 = 5 X **467**

4 The area of a square with side length of 5 cm is **25** cm^2

5 If the perimeter of a rectangle is 24 m, and the length is 8m, then its width = **4** m.

6 54 is ....9.... times the number 6.

7 7 weeks , 5 days = ...54.... days

8 In the opposite bar model, B = ...34,567...

B	
32,619	1,948

Third: Choose the correct answer:

1 The number 30 is a multiple of the number ....3.... (7 or 4 or 8 or [3])

2 If 42 - x = 18 then x = ...24.... (60 or [24] or 26 or 3)

3 40 X ....500.... = 20,000 ([500] or 50 or 5 or 80,000)

4 30 ÷ ....7.... = 4 R 2 (4 or 5 or 6 or [7])

5 2 : 35 + 6 : 55 = ...9 : 30.... (8 : 30 or 4 : 20 or [9 : 30] or 3 : 25)

6 The digit ....2.... is in the Ten Millions place in 428,590,417.

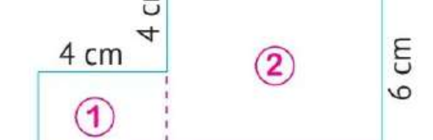
(1 or [2] or 8 or 5)

7 If the perimeter of a square is 20 cm, then its side length is ....5.....

([5] or 80 or 400 or 10)

Fourth: Answer the following:

1 Calculate the area of the opposite figure:



Area of rectangle (1) = 4 X 2 = 8 cm^2

Area of rectangle (2) = 7 X 6 = 42 cm^2

Area of the figure = 8 + 42 = 50 cm

2 There are 72 children in the park. They want to make teams with 8 children in each team. How many teams will they make?

Number of teams = 72 ÷ 8 = 9 teams

3 Heba bought 24 kg of orange and the price for each kg is 8 LE.
How much money did Heba pay?

Heba paid = 24 X 8 = 192 LE

4 Find the GCF of 16,20

Factors of 16 are **1 , 2 , 4 , 8 , 16**

Factors of 20 are **1 , 2 , 4 , 5 , 10 , 20**

Common factors are **1 , 2 , 4**

GCF = **4**

Assiut Governorate - El-Badary Educational Zone

9

First: Choose the correct answer:

1 The value of the digit 4 in 84,375,296 is **4,000,000**

(4,000,000 or 400,000 or 4000 or 40)

2 Rounding the number 456,213 to the nearest Hundred Thousand is **500,000**.

(450,000 or 400,000 or 500,000 or 460,000)

3 735 cm = **7 m , 35 cm** (35m, 7cm or 73m, 5cm or 7m, 35cm or 5m, 73cm)

4 900 ÷ 90 = 10, then the dividend is **900**. (10 or 90 or 900 or 1)

5 39 X 7 = 273 , then 273 ÷ 7 = **39**. (45 or 39 or 49 or 88)

6 673 + [327+ 321] = [673 + **327**] + 321 (673 or 327 or 321 or 648)

7 The perimeter of the rectangle with a length of 5 cm and width of 3 cm equals **16** cm. (8 or 15 or 16 or 2)

Second: Complete the following:

1. By using the bar model [x | 215 | 285] the value of x is ...... 500 ....
2. A square of side length 5 cm, then its perimeter = ... 20 ...... cm.
3. The additive identity element is ...... 0 ....
4. A rectangle with length of 7 cm and width of 5 cm ,

   then its area = ... 35 ...... cm^2
5. 12 - 5 X 2 = ... 2 ......
6. 892 ÷ 4 = ... 223 ......
7. 3 : 25 + 1 : 26 = ... 4 : 51 ......
8. 8,049 + 6,199 = ... 14,248 ......

Third: Choose the correct answer:

1. 12 is equal to 3 times the number ...... 4 .... (2 or 3 or 3 or 4)
2. A square with area 9 cm^2 then its side length is ...... 3 ...... cm.

   (3 or 18 or 36 or 81)
3. 25 X 12 = 12 X 25 represents Commutative property.

   (associative or commutative or identity multiplicative or distributive)
4. 40 is a multiple of number ...... 8 ...... (6 or 7 or 8 or 9)
5. Four hundred twenty-three thousand twelve (<) 400,000 + 30,000 + 2,000 +20 +1 (< or > or =)
6. The area model represents the products

   4 x 35, then the missing value in the model is ...... 20 ....

	30	5
4	120	......

   (9 or 20 or 35 or 140)
7. 5 X 376 = 5 X (...... 300 ...... + 70 + 6) (3 or 30 or 300 or 3000)

Fourth: Answer the following:

1. A fire ant colony has 255,000 ants. A Gigantiops destructor ant colony has 6,200 ants. What is the difference between the size of the two colonies?

The difference = 255,000 – 6,200 = 248,800 ants

2. Find the GCF and 10 and 15

Factors of 10 are 1 , 2 , 5 , 10 **Factors of 15 are 1 , 3 , 5 , 15**

Common factors are 1 , 5 **GCF is 5**

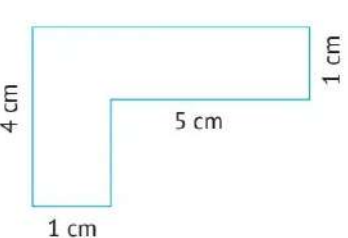
3. Sara traveled 9 days continuously. She traveled 5,000 meters each day. How many kilometers did she walk in all?

5,000 meters = 5 km

The number of kilometers = 9 X 5 = 45 km

4. The perimeter of the following complex figure equals

Perimeter = 6 + 4 + 1 + 3 + 5 + 1 = 20 cm



El Gharbia Governorate - El-Mahala Educational Zone

First: Choose the correct answer:

1. If 600 ÷ 10 = 60 , then the divisor is ...10... (1 or 10 or 60 or 600)
2. Which of the following is a prime number? (1 or 10 or 15 or 17)
3. A rectangle its length is [L] and its width is [W] what is its perimeter? (L + W or L x W or 2 x [L + W] or [2x L] + W)
4. 30 equals 5 times the number ...6... (3 or 4 or 6 or 8)
5. The digit in the Hundred Thousands place in 3,457,652 is ...4... (7 or 6 or 5 or 4)
6. 8 kilometers, 45 meters = ...8,045... meter (845 or 855 or 8,000,045 or 8,045)
7. The opposite model represents the product 5 X 23, then x = ...15... (7 or 115 or 15 or 23)

	20	3
5	100	X

Second: Complete the following:

1. The additive identity is ...0...
2. 3,728 – 1,596 = ...2,132...
3. 3 : 25 + 6 : 42 = ...10 : 07...
4. 40 ÷ (5 + 3) – 1 = ...4...
5. If x – 20 = 30 , then x = ...50...
6. A rectangle of length 7 cm and width 4 cm , then its area = ...28... cm^2
7. A square of side length 6 meters, then its perimeter = ...24... meters
8.

6,360 mL	
...6... L	...360... mL

Third: Choose the correct answer:

1. 13 X 24 = 24 X 13 represents **commutative** property.
   (associative or [commutative] or identity or distributive)

2. **15** is a multiple of 5. (6 or 12 or [15] or 21)

3. 963 ÷ 3 = **321** ([321] or 333 or 222 or 111)

4. 34,000 = **340** Hundreds (34 or [340] or 3,400 or 304)

5. 2,357 ≈ **2,360** [rounding to the nearest Ten]
   ([2,360] or 2,358 or 2,350 or 2,400)

6. 42 is **7** times the number 6. (6 or 4 or 5 or [7])

7. 3 minutes and 12 seconds = **192** seconds. (300 or 312 or [192] or 15)

Fourth: Answer the following:

1. **Arrange the numbers in an ascending order.**

   38,257,967 - 32,968,327 - 42,695 - 7,986,362

   42,695 – 7,986,362 – 32,968,327 – 38,251,967

2. Write the factors of the number 12

   Factors of 12 are 1 , 2 , 3 , 4 , 6 , 12

3. Find the product of 46 X 3

   46 X 3 = 138

4. Find the area of the opposite figure.

   Area = 5 X 5 = 25 km²

5 Km

5 Km 5 Km

5 Km

Kafr El Shiekh Governorate - East Educational Zone

First: Choose the correct answer:

1. The value of the digit 2 in 6,124,030,470 is **20,000,000**
   (20,000 or 200,000 or 2,000,000 or [20,000,000])
2. If 6 X a = 18 , then: a = **3**. (2 or [3] or 4 or 12)
3. The area of rectangle whose length is 8 cm and width 6 cm is **48**.
   (28 or 14 or [48] or 68)
4. **8** is multiple of 4. (1 or 2 or 3 or [8])
5. 112 + (**38** + 77) = (112 + 38) + 77 ([38] or 77 or 115 or 150)
6. 1200 ÷ 6 = **200** (2 or 20 or [200] or 2000)
7. 1 day and 6 hours = **30** hours ([30] or 7 or 66 or 36)

Second: Complete the following:

10 cm	
Area = 50 square cm	x cm

1. In the opposite rectangle, x = **5** cm.
2. **6** L = 6,000 mL
3. 140 = **14** Tens
4. The prime number has only **2** factors.
5. 40 X 78 = **3,120**
6. The perimeter of the square whose side is 8 cm = **32** cm.
7. (6 X 100,000) + (5 X 10,000) + (4 X 1,000) + (3 X 100) = **654,300**
   (Standard form)
8. 478 cm = **4** m + **78** cm

Third: Choose the correct answer:

1. **3** is a factor of 6. ([3] or 12 or 18 or 24)

2 6 X 7 = 7 X 6 represents the **commutative** property.

(associative or [commutative] or identity or zero)

3 Rounding the number 234,432 to the nearest Thousand is **234,000**

(23,500 or 23,000 or [234,000] or 200,000)

4 3,328 - 2,164 = **1,164** (1,244 or [1,164] or 5,432 or 1,264)

5 In the division 23 ÷ 4 , the remainder is **3** (0 or 1 or 2 or [3])

6 A rectangle of length (L) and width (W), then its perimeter =

(L + W) X 2 cm (L + W or L X W or [(L + W) X 2] or (2 X L) + W)

7 10 - 4 X 2 = **2** (12 or 8 or 6 or [2])

Fourth: Answer the following:

1 Use any strategy you prefer to find: 7 X 132.

7 X 132 = 700 + 210 + 14 = 924

	100	30	2
7	700	210	14

2 Using the equation b - 53,500 = 75,200

complete the opposite bar model:

b	
53,500	75,200

Solution : **b = 53,500 + 75,200 = 128,700**

3 Use any strategy you prefer to find 455 ÷ 3:

455 ÷ 3 = 151 R 2

4 Calculate the area of the following complex shap (Show your work area)

6 cm, 4 cm, 2 cm, 1 cm, ①, ②

Area of rectangle (1) = 6 X 4 = 24 cm²

Area of rectangle (2) = 2 X 1 = 2 cm²

Area of the figure = 24 + 2 = 26 cm²

Qena Governorate - Nagaa Hamady Educational Zone

First: Choose the correct answer:

1. 12kg, 45g = ..12,045.. g (1,245 or 12,045 or 120,045 or 4,512)
2. 1 + 40 ÷ 2 = ..21.. (48 or 40 or 23 or 21)
3. Million is the smallest number formed from ..7.. digits. (5 or 6 or 8 or 7)
4. One day and 2 hours = ..26.. hours (24 or 26 or 70 or 17)
5. If 3 X b = 15 then b = ..5.. (3 or 5 or 6 or 4)
6. The additive identity plus 3 = ..3.. (0 or 3 or 1 or 4)
7. The composite number of the following is ..9.. (3 or 5 or 7 or 9)

Second: Complete the following:

1. The value of the digit 7 in 7,589,632 is 7,000,000
2. The divisor in 136 ÷ 8 = 17 is ..8..
3. 5,678 - 3,867 = ..1,811..
4. The perimeter of a square which its side length is 3 cm equal ..12.. cm.
5. The smallest number formed from 2,1,5,7 is ..1,257..
6. The multiplicative identity element is ..1..
7. The number 2,356 to the nearest Tens is ..2,360..
8. 1,3,9,27 are all factors of ..27..

Third: Choose the correct answer:

1. 20,000 ÷ 4 = ..5,000.. (5,000 or 2,000 or 20,000 or 200)
2. 80,000 m = ..80.. km (8 or 800 or 80 or 8,000)

3 12 + 5 = 5 + 12 represents ...commutative... property.

(associative or commutative or additive identity or distributive)

4 20,000 ...=... 200 Hundreds (> or = or < or ≤)

5 ...75... is a multiple of 5. (75 or 71 or 76 or 79)

6 The place value of the digit 5 in 53,649 = Ten Thousands

(Ones or Tens or Ten Thousands or Millions)

7 The perimeter of the rectangle which has 5cm length and 2cm width is ...14... cm. (10 or 14 or 7 or 25)

Fourth: **Answer the following:**

1 Find the product of 23 X 5

23 X 5 = 115

2 A small rectangular ant farm with a length of 20 cm and a width of 8 cm. What is the area of the ant farm?

The area = 20 X 8 = 160 cm^2

3 Find the multiplication equation of: 5 + 5 + 5 + 5 + 5 = 25

5 X 5 = 25

4 Find the GCF of 8, 12

Factors of 8 are: 1 , 2 , 4 , 8

Factors of 12 are : 1 , 2 , 3 , 4 , 6 , 12

Common factors are: 1 , 2 , 4

GCF = 4

Port Said Governorate - Port Fuad Educational Zone

13

First: Choose the correct answer:

1. The perimeter of a square with side length of 5 cm is **20** cm.
   (10 or [20] or 25 or 15)
2. 8 million, 802 thousand, 341 in standard form is **8,802,341**
   (8,802,314 or 8,820,314 or [8,802,341] or 8,820,341)
3. The only even prime number is **2**. (0 or 1 or [2] or 3)
4. 6 tons = **6,000** kg (6 or 60 or 600 or [6,000])
5. Area of a rectangle with length of 10 cm and width of 5 cm is **50**.
   (2 or 30 or 15 or [50])
6. **2** is a factor of 8. ([2] or 5 or 3 or 0)
7. 1 L and 300 mL = **1,300** mL (130 or [1,300] or 13,000 or 1,003)

Second: Complete the following:

1. A week and 3 days = **10** days
2. 23 dm = **230** cm
3. If the area of a rectangle is 21 cm^2, its length is 7 cm, then its width = **3** cm
4. $25 \div 5 - 2 =$ **3**
5. The value of the digit 5 in 2, 514,308 is **500,000**
6. The perimeter of rectangle whose dimensions are 6 cm, 3 cm is **18** cm.
7. The Area of square with a side length of 6 cm is **36** cm^2
8. 246, 715 - 106,492 = **140,223**

Third: Choose the correct answer:

1. ....12.... is multiple of 4. (1 or 3 or 6 or 12)
2. 35 is ....7.... times the number 5. (6 or 7 or 4 or 40)
3. The greatest common factor of 3 and 6 is ....3.... (2 or 3 or 6 or 18)
4. 28 + 0 = 28 is ..additive identity.. property.
   (associative or commutative or additive identity or otherwise)
5. In the opposite bar model x = ...300....

1,300	
x	1,000

   (300 or 4,000 or 2,000 or 2,300)
6. 1,532 ≈ ....2,000.... to the nearest Thousand
   (2,000 or 1,000 or 1,500 or 1,600)
7. 2,055 ÷ 5 = ...411.... (144 or 411 or 311 or 113)

Fourth: Answer the following:

1. Find the GCF of 10 and 15

   Factors of 10 are 1 , 2 , 5 , 10 Factors of 15 are 1 , 3 , 5 , 15

   Common factors are 1 , 5 GCF is 5

2. 784 ÷ 7

   784 ÷ 7 = 112

3. A square picture with a side length of 8 cm. Find its area

   Area = 8 X 8 = 64 cm^2

4. A bridge of ants consists of 142 ants and another bridge consists of 165 ants. How many ants in the two bridges together?

   The number of ants =142 + 165=307 ants

Sohag Gavernorate - Tahta Educational Zone

14

First: Choose the correct answer:

1. 20 ÷ 3 = 6 and the remainder is ...2... (2 or 3 or 4 or 0)
2. The smallest prime number is ...2... (0 or 1 or 2 or 3)
3. 50 liters = ...50,000... mL (50 or 500 or 5,000 or 50,000)
4. 12 + 48 = 48 + 12 this is ...commutative... property.
   (commutative or associative or additive identity or distributive)
5. The place value of the digit 0 in 38,120,324 is Thousands
   (Hundreds or Thousands or Ten Thousands or Hundred Thousands)
6. 2,847,342 to the nearest million is 3,000,000
   (2,000,000 or 3,000,000 or 2,700,000 or 2,800,000)
7. The factor for all numbers is ...1... (0 or 1 or 2 or 3)

Second: Complete the following:

1. 2 weeks and 3 days = ...17... days
2. 1 , 2 , 7 , 14 are factors of the number ...14...
3. The area of a rectangle with a length of 6 cm and width of 3 cm = 18 cm^2
4. 12 million, 38 thousand, 124 in standard form = 12,038,124
5. 8,751 - 2,136 = ...6,615...
6. 400 X 3 = ...1,200...
7. The value of the digit 6 in 341,629 is ...600...
8. 21 is 3 times the number ...7...

Third: Choose the correct answer:

1. 24 ÷ (5 - 1) = ...6...... (20 or 5 or 6 or 4)

2. 10,230,765 ......>...... 9,987,374 (> or < or = or ≤)

3. The smallest 10 digit number is ..milliard..

   (milliard or million or ten thousand or hundred thousand)

4. 20 is a multiple of ......5...... (3 or 6 or 8 or 5)

5. From the opposite area model, the value of x is ..200......

   (200 or 300 or 1,000 or 400)

600	
x	400

6. 3,500 ÷ 5 = ...700..... (7 or 70 or 700 or 7,000)

7. If a X 36 = 36 X 5, then a = ...5...... (10 or 5 or 6 or 36)

Fourth: Answer the following:

1. A squared room its side is 6 meters. What is the perimeter of the room?

   ....the perimeter of room = 6 X 4 = 24 m..........

2. Find the greatest common factor (GCF) for 10 and 20.

   Factors of 10 are 1 , 2 , 5 , 10

   Factors of 20 are 1 , 2 , 4 , 5 , 10 , 20

   Common factors are 1 , 2 , 5 , 10

   GCF is 10

3. Find the product of 128 × 3 [by any way]

   128 X 3 = 300 + 60 + 24 = 384

	100	20	8
3	300	60	24

4. Sami and Ahmed participated in a project, Sami paid 25,607 pounds and Ahmed paid 22,300 pounds. What is the total cost of the project?

   ....The total cost = 25,607 + 22,300 = 47,907 pounds..........

Sohag Governorate - Tema Educational Zone

First: Choose the correct answer:

1. A square with a side length of 5 cm, its area ....25.... cm^2
   (55 or [25] or 10 or 20)
2. ....7.... is a prime number. (4 or 6 or [7] or 10)
3. The value of the digit 9 in 87,921,255 = ...900,000....
   (9,000 or 90,000 or [900,000] or 900)
4. Two days and two hours = ...50.... hours (25 or [50] or 248 or 4242)
5. All the numbers 11 , 13 , 15 , 17 are prime numbers, except ....15.....
   (11 or 13 or 17 or [15])
6. The additive identity when adding to the number 799 = ...799....
   (700 or [799] or 709 or 800)
7. The prime number has only ....2.... factor(s). (1 or [2] or 3 or 4)

Second: Complete the following:

1. The smallest number formed from 8 , 2, 9 , 0 , 5 , 1 , 7 is ..1,025,789
2. 4 L = ...4,000.... mL
3. 638 ÷ 6 = ..106 R 2..
4. 523,523 + 377,137 = ..900,660..
5. The smallest even prime number is ....2....
6. 5 minutes and 10 seconds = ...310.... seconds
7. A square with a side length of 8 cm, then the perimeter = ...32.... cm
8. If a X 27 = 27 X 25 then a = ...25....

Third: Choose the correct answer:

1. 3 km 300 m = ...3,300...... m

(3,300 or 30,300 or 300,003 or 303)

2. Nine millions and six hundreds =9,000,600

(600,900 or 900,600 or 960,000 or 9,000,600)

3. A rectangle its length is L and its width is W, then its perimeter =

2 X (L + W) cm (2 X (L + W) or L + 2 W or 2L + W or 2LW)

4. 38 + 76 = 76 +38 (commutative.. property)

(associative or commutative or additive identity or distributive)

5. 10 times the number 275 = ...2,750.....

(2,750 or 27,510 or 10,275 or 27,510)

6. 55,000,888 ....>........ 51,999,777

(< or > or = or ≥)

7. The number 366,811 approximated to the nearest Thousand is 367,000

(366,000 or 367,000 or 366,810 or 366,800)

Fourth: Answer the following:

1. A road of 800 km length. If a train traveled a distance of 675 km from this road, what is the remaining distance of the road?

The remaining distance = 800 – 675 = 125 km

2. Find the area of the opposite rectangle. If length is 15 cm, and is width 10 cm.

10 cm

15 cm

The area = 15 X 10 = 150 cm^2

3 Ahmed bought 3 pens. If the price of one pen is 100 pounds, what is the price of all pens?

The price of all pens = 100 X 3 = 300 pounds

4 Find the GCF between 24 and 12

Factors of 24 are 1 , 2 , 3 , 4 , 6 , 12 , 24

Factors of 12 are 1 , 2 , 3 , 4 , 6 , 12

Common factors are 1 , 2 , 3 , 4 , 6 , 12 **GCF is 12**

Guide Answers Exercise Book

Exercises on Unit 1

Lessons 1&2

1
- a) Eight million, one hundred four thousand, two hundred eighty eight.
- b) Forty three million, one hundred eighty thousand, five.
- c) Five hundred eighteen million, one hundred twenty-nine thousand, two hundred eight.
- d) Five milliard, two million, four hundred three thousand, seven hundred fifty.
- e) Seven milliard, three hundred sixty five million, four hundred twenty nine thousand, nine hundred sixty-eight.

2
- a) 345,965,728 b) 5,216,190,731
- c) 250,360,980 d) 602,409,308
- e) 62,049,038 f) 9,009,002,002
- g) 7,000,426,251 h) 8,516,000,259
- i) 1,005,006 j) 30,040,080
- k) 500,200,000 l) 17,000,016
- m) 9,000,002,000 n) 10,000,010
- o) 4,400,000,000

3
- a) Six million, two hundred forty eight thousand, one hundred twenty four
- b) Twenty one million , six hundred fifty thousand , two hundred thirty
- c) Forty million, two hundred thousand, forty seven
- d) Six hundred fifteen million , three hundred forty thousand , two hundred one
- e) Nineteen million , one hundred ninety thousand , one hundred nine
- f) Six milliard, twenty five million , one hundred forty thousand , eight hundred .
- g) Three milliard , one hundred twenty million, five thousand , twelve
- h) Nine milliard , two million , four thousand, three
- i) Fifty two million
- j) One hundred twenty million.
- k) Twenty million, seven
- l) Five hundred million , two thousand , seventy
- m) Three milliard , two hundred fifty thousand
- n) Three milliard , Eight hundred million , fifty thousand , nine
- o) Nine milliard
- p) One milliard , two hundred fifty thousand, sixty

4
- a) Ones , 8
- b) Hundreds , 100
- c) Ten Thousands , 80,000
- d) Millions , 0
- e) Milliards , 7,000,000,000
- f) Tens , 60
- g) Thousands , 7,000
- h) Hundred Thousands , 500,000
- i) Hundred Millions , 400,000,000

5
- a) Tens b) Ten Thousands
- c) Millions d) Ones
- e) Hundred Thousands
- f) Hundreds g) Ten Millions
- h) Milliards i) Hundred Millions

6
- a) 528,745,432 b) 789,654,026
- c) 427,167,523 d) 210,347,163
- e) 793,400,063 f) 7,463,814,325
- g) 9,521,005,136 h) 8,852,963,852
- i) 520,753,159 j) 8,201,093

7
- a) 6,000 b) 30,000
- c) Thousands d) Ones

e) Seventy seven million, two thousands, two hundred five.
f) 305,014,007
g) Ten Millions.
h) Ten Thousands
i) 7
j) 9

8)
a) 7
b) 0
c) Tens
d) Hundred Thousands
e) 4,605,090,015
f) 6,000,500,030
g) Ten Thousands
h) 2

9)
a) 300
b) 500,000
c) 200,000,000
d) 600
e) 70,000
f) 20,000,000
g) 90,000,000
h) 100,000
i) 50
j) 10
k) 80
l) 9,000
m) 1,000

10)
a) 5
b) 60,000
c) 6,000,000
d) 100
e) 300
f) 9
g) 10

11)
a) 800,000
b) Tens
c) 60,000
d) 300,000,000
e) 6,000,000
f) 8,000
g) 400,000
h) 40
i) 60
j) 200,000,000
k) 5,000
l) 1,000
m) 30,000,000
n) 205,678
o) 1,000

12) 30 , 750 , 160 , 940 , 1,280 , 56,230

13)
a) 800
b) 1,200
c) 100,000
d) 60,000
e) 800
f) 30,000

Assessment 1

on Lessons (1&2)

1)
a) Thousands
b) 100
c) Million
d) Ten Thousands.

2)
a) 45,000
b) 30,000,000
c) 400,000
d) 80

3)
a) → 3
b) → 1
c) → 4
d) → 2

Lessons 3&4

1)
a) Seven milliard, two hundred million, one hundred fifty thousand, two hundred eight.
b) Four hundred million, three hundred thousand, two hundred.
c) One million, five hundred thousand.
d) Twenty million, fifty thousand, three.
e) Four milliard, six million, twenty thousand, three hundred twenty-six.
f) Two milliard, thirty million, seven hundred thousand, six hundred.
g) Two hundred million, seven hundred thousand.

2)
a) 500,020,050
b) 4,007,005,009
c) 18,090,000
d) 1,000,520,040
e) 8,050,060,307
f) 9,000,800,300
g) 9,030,060,020
h) 3,000,300,000

3)
a) 400,000,000 + 100,000 + 20,000 + 600 + 3
b) 5,000,000,000 + 200,000,000 + 90,000 + 50
c) 20,000,000 + 700,000 + 50,000 + 600
d) 200,000,000 + 50,000,000 + 500 + 20 + 4
e) 6,000,000,000 + 800,000,000 + 10,000,000 + 5,000,000 + 400,000 + 30
f) 9,000,000,000 + 30,000,000 + 5,000,000 + 900,000 + 5,000 + 300 + 6
g) 100,000,000 + 90,000,000 + 600,000 + 20,000 + 4,000 + 10 + 7
h) 60,000,000 + 3,000,000 + 500 + 90 + 7

4)
a) (3 x 100,000,000) + (2 x 100,000) + (5 x 10,000) + (1 x 100) + (2 x 1).
b) (7 x 1,000,000,000) + (5 x 10,000,000) + (8 x 100) + (6 x 10) + (5 X 1)
c) (3 x 1,000,000,000) + (6 x 1,000,000) + (8 x 10,000) + (5 x 100)
d) 2,090,807,376
e) 3,600,053,080
f) 256,009,483

5)
a)
- 8,007,206,059
- Eight milliard, seven million, two hundred six thousand, fifty nine.
- 8,000,000,000 + 7,000,000 + 200,000 + 6,000 + 50 + 9

- (8 x 1,000,000,000) + (7 x 1,000,000) + (2 x 100,000) + (6 x 1,000) + (5 x 10) + (9 x 1)

b
- 920,702,800
- Nine hundred twenty million, seven hundred two thousands, eight hundred.
- 900,000,000 + 20,000,000 + 700,000 + 2,000 + 800
- (9 x 100,000,000) + (2 x 10,000,000) + (7 x 100,000) + (2 x 1,000) + (8 x 100)

c
- 39,800,202
- Thirty-nine million, eight hundred thousand, two hundred two.
- 30,000,000 + 9,000,000 + 800,000 + 200 + 2
- (3 x 10,000,000) + (9 x 1000,000) + (8 x 100,000) + (2 x 100) + (2 X 1)

d
- 2,890,105
- Two million, eight hundred ninety thousand, one hundred five.
- 2,000,000 + 800,000 + 90,000 + 100 + 5
- (2 x 1,000,000) + (8 x 100,000) + (9 x 10,000) + (1 x 100) + (5 x 1)

6 a Thirty-five million, two hundred thousand, eight hundred ten.
b 650,013,526 c 7,400,002,030
d 100,000,000 + 50,000,000 + 200 + 30
e 8,020,802,080 f 6,060,060,660
g 3,050,012,245 h 5,500,050,500
i 305,700,016 j 5,006,009,007
k 330 million, 330 thousand, 330

Assessment 2

on Lessons (3&4)

1 a Three hundred fifty million, three hundred fifty
b 4,053,004,503 c 435,400,305
d 260,026,026 e 80,000,000

2 a Five milliard, five million, fifty thousand, five hundred
b (4 x 1,000,000,000) + (3 x 10,000,000) + (9 x 100,000) + (5 x 1,000) + (7 x 10)
c Ten Thousands d (5 x 1,000,000)
e (7 x 100,000,000) + (7 x 10,000)

3 a → 2 b → 4 c → 1 d → 5 e → 3

4 1 3,090,200,240
2 Three milliard, ninety million, two hundred thousand, two hundred forty.
3 3,000,000,000 + 90,000,000 + 200,000 + 200 + 40
4 (3 x 1,000,000,000) + (9 x 10,000,000) + (2 x 100,000) + (2 x 100) + (4 x 10)

Assessment on Concept 1

1 a 30,000 b 20,000
c 4,006,054,028 d 6,006,000

2 a 500,040,060 b Ten Millions
c 324,073 d 4,000

3 a → 3 b → 1 c → 4 d → 2

Lessons 5–7

1 a > b = c >
d = e < f <
g < h > i =
j = k <

2 a 5,000 , 45,000 , 550,000 , 25,030,000
b 154,200 , 205,687 , 360,548 , 545,352
c 557,589 , 557,859 , 557,895 , 557,985
d 500,000 , 500,005 , 500,500 , 505,550

3 a 999,999 , 909,909 , 900,990 , 900,000
b 55,512 , 55,251 , 55,152 , 55,125
c 300,020,010 , 300,002,100 , 200,300,100 , 200,030,001

4

Standard Form	Order
530,000,450	4
503,400,005	3
530,405,000	5
5,030,450	1
50,030,045	2

5

Standard Form	Order
99,990,090	5
9,000,000,090	2
999,000,000	3
9,000,090,000	1
900,900,900	4

6

Standard Form	The Order
5,000,300,009	3
5,000,300,090	4
5,000,300,900	5
5,000,003,900	2
5,000,003,009	1

7

Standard Form	The Order
1,000,503,205	4
1,000,030,250	5
1,050,325,000	2
1,500,030,250	1
1,032,005,000	3

8 a < b < c >
d 10,000,000 e 35,202,000
f 792,689 g 280 h 75,000

Assessment 3

on Lessons (5-7)

1 a 2,000,003,003 b Ten Thousands
c 200,045 d 1,000,000

2 a 900,000,000 + 200,000 + 6,000 + 8
b 405,000
c Hundred Thousand
d Thousands
e Eight million, eight thousand

3 10,002,005 , 10,020,500 , 10,025,000 , 10,200,050

Lesson 8

1 a **Midpoint:** 345 , 343 ≈ 340
b **Midpoint:** 475 , 472 ≈ 470
c **Midpoint:** 915 , 912 ≈ 910
d **Midpoint:** 4,295 , 4,298 ≈ 4,300

2 a **Midpoint:** 850 , 829 ≈ 800
b **Midpoint:** 250 , 293 ≈ 300
c **Midpoint:** 1,250 , 1,280 ≈ 1,300
d **Midpoint:** 6,950 , 6,988 ≈ 7,000

3 a **Midpoint:** 5,500 , 5,425 ≈ 5,000
b **Midpoint:** 6,500 , 6,774 ≈ 7,000
c **Midpoint:** 18,500 , 18,524 ≈ 19,000
d **Midpoint:** 29,500 , 29,954 ≈ 30,000

4 a **Midpoint:** 150,000
178,652 ≈ 200,000
b **Midpoint:** 450,000
462,685 ≈ 500,000
c **Midpoint:** 950,000
972,821 ≈ 1,000,000

5 a **Midpoint:** 45,000,000
45,284,564 ≈ 50,000,000
b **Midpoint:** 5,000,000
2,326,120 ≈ 0

6 a **Midpoint:** 5,500,000,000
5,205,452,152 ≈ 5,000,000,000
b **Midpoint:** 4,500,000,000
4,815,600,002 ≈ 5,000,000,000

7 a 50 b 80 c 850
d 970 e 10 f 2,600
g 76,000 h 100,000

8 a 8,000 b 6,000 c 0
d 10,000 e 29,000 f 100,000
g 100,000 h 456,000

9 a 5,000 b 300,000 c 300,000
d 1,000,000 e 90,000 f 10
g 1,000 h 1,000,000 i 1,000
j 1,000,000 k 999 ≈ 1,000
l 9,266 ≈ 9,000 m 651 ≈ 700
n 14,875 ≈ 15,000

10 a 1,000 b 900,000 c 100,000
d 6,000,000 e 100 f 100
g 10,000 h 454 i 1,150

Assessment 4

on Lesson (8)

1 a 8,000 b 4,950 c 100
d 10 e <

2 a 800,000,000 + 90,000,000 + 6,000,000 + 3,000 + 10 + 5

b Milliards. c 10,600 , 11,000

d 7,000,000,000 e 549

3 Three hundred thirty thousand, thirty million - 30,030,000 - 3,000,030,000

Assessment on Concept 2

1 a 200,753 b < c <

d 471,000

2 a 3,200 b 95,500,000

c 2,040,506 d 5,000

3 a 3,999,830 , 3,999,992 , 3,001,328,391 , 3,010,001,034

b 1 = 2 >

Exercises on Unit 2

Lesson 1

1 a 6 , Commutative

b 9 , Associative

c 8 , Identity Element

d 27 , Commutative

e 9 , Identity Element

f 41 , 94 , Associative

g 39 , Commutative

h 0 , Identity Element

i 300 , 125 , Associative

2 a 15 + 27 + 85 = 15 + 85 + 27 "Commutative"

= (15 + 85) + 27 "Associative"

= 100 + 27 = 127

b 755 + 615 + 245 = 755 + 245 + 615 "Commutative"

= (755 + 245) + 615 "Associative"

= 1,000 + 615 = 1,615

c 42 + 908 + 92 = 42 + (908 + 92) "Associative"

= 42 + 1,000 = 1,042

d 244 + 0 + 256 = 0 + 244 + 256 "Commutative"

= 0 + (244 + 256) "Associative"

= 0 + 500 "Identity Element"

= 500

e 244 + 0 = 0 + 244 "Commutative & Identity Element"

= 244

3 a Commutative b Associative

c Identity Element d Associative

e Commutative f Identity Element

g Associative h Identity Element

i Associative j Associative

Assessment 1

on Lesson (1)

1 a 45 , Commutative b 85 , Associative

c 8,000,000 d 30,000

e 0 , Identity element

2 a Commutative b 10

c 10,000 d Associative

e 550,000,005

3 a > b >

c < d >

4 3,458,582, 3,548,258, 3,584,852, 3,854,852

Lesson 2

1 a 120 b 80 + 40 = 120

c 100 − 20 = 80 d 200 + 300 = 500

e 400 − 300 = 100 f 2,000 + 4,000 = 6,000

g 78,000 − 69,000 = 9,000

2 Answer by yourself.

3

Problem	To the nearest 10	To the nearest 100	To the nearest 1,000
a 24,456	24,460	24,500	24,000
+ 13,428	+ 13,430	+ 13,400	+ 13,000
37,884	(✓) 37,890	37,900	37,000

b 256,634 + 885,365 = 1,141,999	256,630 + 885,370 = (✓) 1,142,000	256,600 + 885,400 = (✓) 1,142,000	257,000 + 885,000 = (✓) 1,142,000
c 2,256 + 3,815 = 6,071	2,260 + 3,820 = (✓) 6,080	2,300 + 3,800 = 6,100	2,000 + 4,000 = 6,000
d 125,278 + 289,132 = 414,410	125,280 + 289,130 = (✓) 414,410	125,300 + 289,100 = 414,400	125,000 + 289,000 = 414,000

4 a 9,400 + 7,200 = 16,600 / 9,372 + 7,245 = 16,617
b 370 + 460 = 830 / 458 + 367 = 825
c 900 + 900 = 1,800 / 855 + 855 = 1,710
d 500 + 600 = 1,100 / 511 + 619 = 1,130
e 700 + 600 = 1,300 / 686 + 621 = 1,307

Assessment 2
on Lesson (2)

1 a 99 b 100,000 , 100 , 10
c 90,000,000 d 9 , Associative
e 75,000
2 a 100 b 800,008,000
c 56,000 d 100
e Commutative
3 9,900,990 , 1,000,000 , 990,909 , 100,000
4 800 + 400 = 1,200
773 + 375 = 1,148

Lesson 3

1 a 36,160 b 542,681
c 177,761 d 185,952
e 218,103 f 99,999
g 506,000 h 317,142
i 1,019,522 j 36,323,726
2 a 3,352 – 3,350 (✓) – 3,300 ( ) – 4,000 ( )
b 7,541 – 7,550 (✓) – 7,600 ( ) – 7,000 ( )
c 48,687 – 48,690 (✓) – 48,700 ( ) – 49,000 ( )
d 103,216 – 103,220 (✓) – 103,200 ( ) – 103,000 ( )
3 a 621 – 476 = 145 trees
b 1,270 – 630 = 640 pounds
c 1,028 – 542 = 486 boys
d 3,256 – 2,804 = 452 pounds
e 1,200 – 235 = 965 cm
f 4,015 – 725 = 3,290 books
g 5,100 – 3,250 = 1,850 pounds

Assessment 3
on Lesson (3)

1 a 9,000,500,400 b Millions
c 243 d 10,000
2 a 300,500,700 b 4,060,109
c 999,999 d 5,000
e Identity Element
3 a 90,911 b 50,060
c 11,671 d 710,436
4 773 – 375 = 398 ships

Assessment on Concept 1

1 a Commutative b 45
c 20 d 0
2 a 5,363 b 4,120
c 454 d 227
3 a 6,273 + 8,544 = 14,817
b 150 + 160 = 310

Lessons 4&5

1 a x = 207 – 125
x = 82

207	
X	125

b 511 c 5,161 d 1,131
e 590 f 1,173 g 253
h 388 i 205 j 420

2 a x = 1,200 – 700
x = 500

1,200	
700	X

b 8,000 c 9,500 d 67,125
e 5,950 f 1,148 g 289,000

3 a 58,620 + 58,620 = 117,240 meters
193,120 – 117,240 = 75,880 meters

b 167,029 + 67,370 = 234,399

404,901 – 234,399 = 170,502

c 1,525 + 19,750 + 3,705 = 24,980 ants

30,520 – 24,980 = 5,540 ants

d 1,232 – 876 = 356 doughnuts

Assessment 4

on Lessons [4&5]

1 **a** 73 **b** 4,000,000

c 9,000,020,050 **d** 75

e W + 30 = 45

2 **a** 37 **b** 3,020,040

c 7 **d** 5

e 83 – e = 52

3 **a** 31 + a = 56 , a = 56 – 31 = 25 girls

b 54 + b = 67 , b = 67 – 54 = 13 pounds

Assessment on Concept 2

1 **a** 112 **b** 14

c

93	
w	42

d m = 25 + 31

2 **a** 57,999 + 57,024 = 115,023

132,890 – 115,023 = 17,867 ants

b 474,401 + 108,951 = 583,352 population

583,352 – 429,999 = 153,353 population

Exercises on Unit 3

Lesson 1

1 **a** Millimeters **b** Centimeters

c Meters **d** Kilometers

e Millimeters **f** Centimeters

g Kilometers **h** Meters

i Centimeters **j** Meters

k Meters

2 Answer by yourself.

3 **a** 525 **b** 2,038

c 3,005 **d** 8,550

e 10,035 **f** 20 , 007

g 5 , 74 **h** 70 , 50

i 602 , 50 **j** 1 , 258

k 20 , 240 **l** 65 , 5

m 40 , 5 **n** 82 , 5

o 2 , 2

4 **a** 745 **b** 902

c 2,008 **d** 5,090

e 8,750 **f** 80,060

g 40,007 **h** 55

i 67 **j** 84

k 8 , 60 **l** 5 , 4

m 50 , 65 **n** 210 , 50

o 2 , 745 **p** 71 , 25

q 12 , 500 **r** 72 , 5

s 10 , 8 **t** 15 , 5

5 **a** Centimeters **b** 7,000

c 8 **d** 50,020

e 5,050 **f** 3,000

g < **h** <

i =

6 8 m = 8 x 100 = 800 cm

7 10 km = 10,000 m = 1,000,000 cm

8 250 dm = 2,500 cm = 25,000 mm

9 250 + 250 + 250 + 250 = 1,000 m = 1 km

Number of hours = 4 hours

Assessment 1

on Lesson [1]

1 **a** Meter **b** mass

c 250,050,005 **d** 2 km

e 43

2 **a** 40,000 , 25 , 40,025

b 95 , 70

c Capacity **d** Milliards

e 54,600

3 **a** < **b** <

c > **d** > **e** =

4 1,500 cm , 25 m , 2,000 dm , 2 km

5 2 km = 2,000 m = 20,000 dm = 200,000 cm

Lesson 2

1 a Grams b Grams
c Kilograms d Kilograms
e Grams f Kilograms

2 Answer by yourself.

3 a 5,200 b 8,007
c 15,015 d 20,200
e 3 , 250 f 60 , 24
g 200 , 60 h 10 , 6

4 a 4,000 b 20,000
c 300,000 d 680,000
e 3 f 90
g 600 h 905
i 3 , 250 j 24 , 120
k 30 , 20 l 300 , 8
m 3,245 n 15,020
o 12,150 p 20,100

5 a Gram b ring
c 40,000 d 200,000
e 60 f 3
g 20,050 h 10,300

6 125,350 grams.

7 3 kilograms ، 493 grams

8 5,200 + 8,000 = 13,200 grams

Assessment 2

on Lesson (2)

1 a Kilogram b desk
c 50 d 30,125
e 50,000

2 a 9,999,999 b 5,004 c 56 , 240
d (3 x 100,000) + (1 x 10,000) + (2 x 100) + (5 x 1)
e 1,000,000

3 a > b <
c < d = e =

4 4,300 + 3,000 + 900 = 8,200 grams

Lesson 3

1 a Milliliter b Liter
c Milliliter d Liter
e Liter f Milliliter

2 Answer by yourself.

3 a 3,450 b 4,070
c 20,008 d 12,500
e 8 ، 56 f 31 ، 500
g 40 ، 3 h 6 ، 70

4 a 3,000 b 50,000 c 16,000
d 20,000 e 7 f 80
g 15 h 200 i 8 ، 20
j 20 ، 50 k 100 ، 9 l 10 ، 16
m 3,500 n 20,040 o 12,009

5 a Milliliter b capacity
c 20,000 d 100,000
e 5 f 300
g 45,045 h 60,006

6 • 50,000 • 35,130
• 50,000 – 35,130 = 14,870 milliliters

7 • 4,250 • 1,050
• 4,250 + 1,050 = 5,300 milliliters

8 500,000 – (250,600 + 125,500)
= 500,000 – 376,100 = 123,900 milliliters

Assessment 3

on Lesson (3)

1 a 10 b 50,000
c 14,014 d >
e 75,000

2 a 88,008,008 b 20 , 250 c 205 , 0
d 60 e 50,020

3 a 87,703 b 28,510
c 100,000 d 56,000

4 5,500,000 , 5,050,000 , 500,500 , 500,005

5 2,000 – 660 = 1,340 milliliters

Assessment on Concept 1

1 a 12,000 b Kilogram c 620

2 a 7 b 330 c 5 , 492

3 a 8 m = 800 cm b 1 liter = 1000 mL

Lessons 4&5

1 , 2 , 3 & 4 Answer by yourself.

5 (a) 10 (b) 33 (c) 20
(d) 32 (e) 68 (f) 82
(g) 220 (h) 130 (i) 85
(j) 230 (k) 615 (l) 123

6 (a) 3 , 4 (b) 5 , 1
(c) 6 , 6 (d) 1 , 5
(e) 2 , 12 (f) 10 , 10
(g) 1 , 35 (h) 3 , 20
(i) 9 , 20 (j) 1 , 5
(k) 3 , 15 (l) 6 , 20

7 (a) 10:51 (b) 7:51
(c) 9:29 (d) 9:20
(e) 8:17 (f) 9:14
(g) 2:10 (h) 4:04
(i) 00:50 (j) 2:45
(k) 2:25 (l) 10:25
(m) 9:51 (n) 10:00
(o) 7:10 (p) 5:17
(q) 2:10 (r) 00:30

8 11 hours = 660 minutes

9 120 + 15 = 135 minutes

10 8:35 + 1:30 = 10:05

11 7:42 – 6:30 = 1:12
One hour and 12 minutes

Assessment 4
on Lessons (4&5)

1 (a) Associative (b) $>$
(c) 50 (d) 8
(e) 20,000

2 (a) 6:00 (b) 610
(c) 50,000 (d) 450,462
(e) 5 , 4

3 (a) (b) (c)

4 5:35 + 1:15 = 6:50

Lessons 6&7

1 950 – (25 + 37) = 888 g

2 106 – 10 = 96 cm

3 3,000 – 2,000 = 1,000 m = 1 km

4 7,450 + 17,120 = 24,570 g

5 8,000 – 2,829 = 5,171 mL

6 540 – 250 = 290 min

7 300 + 500 = 800 mm = 80 cm

8 20,000 – 17,000 = 3,000 g

9 4,000 – (1,200 + 950) = 1,850 mL

10 5:10 - 3:45 = 1:25 = 85 min
Yes, he broke the rule
85 – 80 = 5 min

11 12 + 3 = 4 m = 400 cm

12 30 x 5 = 150 min

13 5,000 x 9 = 45,000 m = 45 km

14 10 x 50 = 500 g

15 6 x 5,000 = 30,000 m = 30 km

16 8 x 30 = 240 min = 4 hours

17 10,000 ÷ 2,000 = 5 days

18 5 x 20 = 100 km = 100,000 m

Assessment 5
on Lessons (6&7)

1 (a) $<$ (b) 1
(c) 360 (d) 2,000,000
(e) 3,030,300 (f) Commutative.

2 (a) 75 (b) 3 , 15
(c) 600,706,706 (d) 1:22
(e) 60,000,000

3 (a) → 3 (b) → 1
(c) → 4 (d) → 2

4 5,005,050 , 5,005,500 , 5,050,050 , 5,500,005

Assessment on Concept 2

1 (a) 4:10 (b) 3:05 (c) 130

2 (a) 38 (b) 2 , 20 (c) 9:02

3 3,400 + 9,700 = 13,100 gram

4 2,040 – 980 = 1060 cm

Exercises on Unit 4

Lesson 1

1. a 22 cm b 28 cm
   c 38 mm d 50 m
   e 80 m f 20 cm
   g 70 m h 120 mm

2. a 200 cm b 8 m
   c 56 m d 120 cm
   e 346 m

3. 50 m, 10 m 40 m, 20 cm

4. 15 m, 10 m 20 m, 5 m

5. P = 12 x 4
   = 48 cm (14 cm, 10 cm)

6. P = 28 x 4
   = 112 cm (30 cm, 26 cm)

7. P = 30 x 4
   = 120 cm (30 cm)

8. a L + W + L + W b L , W
   c L , W d S , 4
   e 16 cm f 50 m
   g 24 cm h 80 mm

9. a P = (L + W) x 2
   b P = (L x 2) + (W x 2)
   c P = L + W + L + W
   d 24 e 28 f 24
   g 40

Assessment 1

on Lesson [1]

1. a 25 b 7 c 18
   d 300,030,000 e 214

2. a 80 mm b 40,020,030
   c Hundred Thousands
   d 45 , 19 , Associative e 45

3. a 701,309 b 350,062
   c 502,000,473 d 799,999,999

4. 540,000 , 500,400 , 450,000 , 405,000 , 400,500

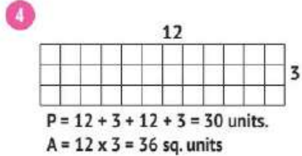
5. P = (2 + 5) x 2 = 7 x 2 = 14 m

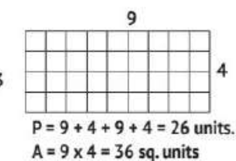
Lesson 2

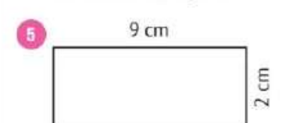
1. a 24 cm^2 b 40 cm^2
   c 54 mm^2 d 120 m^2
   e 400 m^2 f 25 cm^2
   g 9 m^2 h 81 cm^2

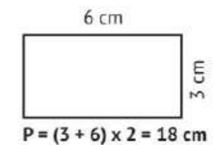
2. A = 8 x 20 = 160 cm^2

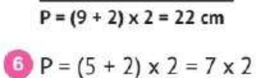
3. P = 6 + 6 + 2 + 6 + 6 + 2 = 28 m
   A = 12 x 2 = 24 m^2

4.




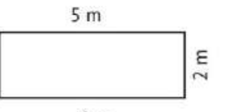
5.




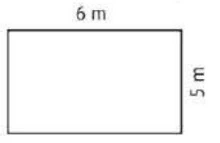


P = (9 + 2) x 2 = 22 cm P = (3 + 6) x 2 = 18 cm

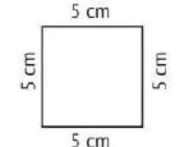
6. P = (5 + 2) x 2 = 7 x 2
   = 14 m
   A = 5 x 2 = 10 m^2



7. P = (6 + 5) x 2 = 11 x 2
   = 22 m



8. P = 5 x 4
   = 20 cm



9 a L x W b S x S
c 24 ، 27 d 200
e A = 3 x 3 = 9 cm^2.
A = 3 x 7 = 21 cm^2.
A = 9 + 21 = 30 cm^2.

10 a A = L x W b A = S x S
c 49 d 32
e 24

Assessment 2
on Lesson [2]

1 a 64 b 70,000
c 400,040,004 d 18 cm e >

2 a 50 cm^2 b 50,000
c 500,000 d 5
e 100

3 a > b <
c < d >

4 a A = 16 + 32 = 48 cm^2
b P = (4 + 12) x 2 = 16 x 2 = 32 cm

5 A = 6 x 8 = 48 m^2

Lesson 3

1 a 26 cm , 40 cm^2 b 6 m , 24 m^2
c 8 m , 56 cm^2
d 10 mm , 150 mm^2
e 10 mm , 200 mm^2
f 7 cm , 26 cm g 9 cm , 32 cm
h 4 dm , 20 dm i 5 dm , 26 dm

2 a 16 cm , 16 cm^2 b 28 cm , 49 cm^2
c 8 cm , 64 cm^2 d 5 m , 25 m^2
e 6 mm ، 24 mm f 9 mm ، 36 cm

3 8 + 8 + 4 + 5 + 4 + 3 = 32 meters.
A = 12 + 32 = 44 m^2

4 10 x 10 = 100
So, the side length = 10 cm.

10 m
10 cm

5 110 ÷ 2 = 55 m
55 – 25 = 30 m

30 m
25 m

6 W = 1200 ÷ 40 = 30 cm

7 100 ÷ 2 = 50 cm W = 50 – 30 = 20 cm

8 a 10 b 6 c 5
d 6 e 9 f 20

9 a 8 b 9 c 48
d 24 e 4 f 7
g 100 h 24

Assessment 3
on Lesson [3]

1 a 9 b 900,000
c Additive Identity Element.
d 10,000 e meter.

2 a 28 b 50 , 65
c 100,000 , 100 , 10
d 218 – Commutative e 541

3 a P = 20 x 4 = 80 mm ، A = 20 x 20 = 400 mm^2
b P = (8 + 4) x 2 = 12 x 2 = 24 cm ,
A = 8 x 4 = 32 cm^2

4 A = 8 x 4 = 32 km^2

Lesson 4

1 a P = 38 cm , A = 48 cm^2
b P = 58 cm , A = 150 cm^2
c P = 64 cm , A = 176 cm^2
d P = 76 cm , A = 192 cm^2
e P = 20 cm , A = 16 cm^2

2 P = 34 cm , A = 60 cm^2

3 P = 24 cm , A = 32 cm^2

Assessment 4
on Lesson [4]

1 a 2,050 b 125 c 5,050
d mass. e 2

2 a 26
b Thirty-six million, two hundred fifty.
c 5 d 100 e 100

3 P = 72 cm , A = 210 cm^2

Assessment on Concept 1

1 a 20 b 14 c m^2
2 a 26 cm b 18 m c 28 m
3 a < b > c <

Exercises on Unit 5

Lessons 1-3

1. a) 5 x 3 = a b) 6 x 7 = b
   c) 3 x 8 = c d) d = 4 x 9
   e) e = 2 x 6 f) f = 5 x 7
   g) 28 = 7 x m h) 35 = 5 x h
   i) 48 = 6 x k j) 49 = f x 7
   k) 64 = p x 8 l) 42 = a x 6
2. a) x = 3 x 5 b) p = 3 x 4
   c) A = 4 x 6 d) 45 = 5 x a
   e) b = 7 x 3
3. a) 35 ÷ 5 = 7 b) 48 ÷ 8 = 6
   c) 45 ÷ 9 = 5 d) 30 ÷ 6 = 5
   e) 14 ÷ 7 = 2 f) 54 ÷ 9 = 6
   g) 48 h) 18
   i) 24 j) 10
4. a) x = 6 x 3 , x = 18
   b) y = 7 x 5 , y = 35
   c) z = 3 x 8 , z = 24
   d) m = 5 x 9 , m = 45
   e) 45 = 9 x a , a = 45 ÷ 9 = 5
   f) 40 = 5 x b , b = 40 ÷ 5 = 8
   g) 12 = 3 x m , m = 12 ÷ 3 = 4
   h) 21 = 7 x n , n = 21 ÷ 7 = 3
5. a) 24 = 3 x a b) 54 = 9 x b
   c) x = 5 x 2 d) y = 7 x 3
   e) 18 ÷ 3 = 6 f) 42 ÷ 6 = 7
   g) 28 ÷ 4 = 7 h) 54
6. a) 9 = 3 x a , a = 9 ÷ 3 = 3 goals
   b) 18 = 3 x b , b = 18 ÷ 3 = 6 pounds
   c) 15 = a x 5 , a = 15 ÷ 5 = 3 times
   d) 36 = m x 6 , m = 36 ÷ 6 = 6 times
   e) x = 2 x 8 , x = 16 years
   f) y = 5 x 20 , y = 100 km
7. a) a = 3 x 4 b) n = 3 x 6
   c) 15 d) x = 3
   e) 4 f) four times 2

Assessment 1
on Lessons (1-3)

1. a) 3,000,025,200 b) 6
   c) P = 4 x S d) 24
   e) 8 x 4
2. a) 500,000,000 b) 6 x a
   c) 35 , Commutative
   d) 9 e) 702,080,300
3. 200,755 , 360,450 , 450,005 , 850,600
4. a) 12 = 4 x a b) 20 = 5 x m
   c) 16 = 8 x y d) 54 = 9 x z

Assessment on Concept 1

1. a) 3 b) 35 c) 3 X 6 = b
2. a) 54 , 54 , 6 b) 9 c) 8
3. a) 56 = 7 X b
   b = 56 ÷ 7 = 8 years
   b) [1] 32 ÷ 8 = 4 [2] 9 X 5 = 45

Lessons 4&5

1. a) 5 b) 6 c) 0
   d) 0 e) 40 f) 600
   g) 7,000 h) 240 i) 1,500
   j) 120,000 k) 564,000
2. a) 3 b) 7 c) 6
   d) 12 e) 9 f) 4
   g) 0 h) 0 i) 8
   j) 100 k) 9 l) 40
   m) 17 n) 1,000 o) 1,000
3. a) > b) = c) >
   d) =
4. a) 20 b) 200 c) 40
   d) 9 e) 60 f) 500
5. 2 x 100 = 200 mm
6. 200 x 6 = 1,200 pounds
7. 90 x 20 = 1,800 piasters
8. 30 x 5 = 150 books
9. 3 x 4 = 4 x 3 2 x 6 = 6 x 2
10. 3 x 8 = 8 x 3 4 x 6 = 6 x 4

Assessment 2

on Lessons (4&5)

1. a) 40 b) 4
   c) 1,000 d) 6 x m = 48
   e) 85
2. a) 3 b) 300,000
   c) 20 d) 500
   e) 1
3. a) 90,001 b) 35,182
   c) 4,000 d) 30,000
4. 10 x 2 = 20 m.

Lessons 6&7

1. a) (6 x 2) x 10 = 12 x 10 = 120
   b) (5 x 4) x 6 = 20 x 6 = 120
   c) (8 x 5) x 5 = 40 x 5 = 200
   d) (10 x 6) x 8 = 60 x 8 = 480
   e) 8 x (6 x 5) = 8 x 30 = 240
   f) 10 x (6 x 9) = 10 x 54 = 540
   g) 5 x (2 x 10) = 5 x 20 = 100
   h) 8 x (10 x 10) = 8 x 100 = 800
2. a) 7 , 2 b) 9 , 7
   c) 2 , 8 d) 7 , 10
   e) 20 , 12 f) 2 , 8
   g) 22 , 35 h) 18 , 25
3. a) 100 b) 400 c) 50
   d) 100 e) 5 f) 4,000
   g) 50 h) 2 i) 600
   j) 20,000 k) 40,000 l) 50,000
4. a) 6 x (2 x 10) = (6 x 2) x 10 = 12 x 10 = 120
   b) 9 x (2 x 100) = (9 x 2) x 100 = 18 x 100 = 1,800
   c) 7 x (3 x 1,000) = (7 x 3) x 1,000
   = 21 x 1,000 = 21,000
   d) 2 x 80 = 2 x (8 x 10) = (2 x 8) x 10 = 16 x 10
   = 160
   e) 3 x 50 = 3 x (5 x 10) = (3 x 5) x 10 = 15 x 10
   = 150
   f) 9 x 500 = 9 x (5 x 100) = (9 x 5) x 100
   = 45 x 100 = 4,500
   g) 8 x 2,000 = 8 x (2 x 1,000) = (8 x 2) x 1,000
   = 16 x 1,000 = 16,000
   h) 3 x 70 = 3 x (7 x 10) = (3 x 7) x 10 = 21 x 10
   = 210
   i) 9 x 80 = 9 x (8 x 10) = (9 x 8) x 10 = 72 x 10
   = 720
   j) 6 x 300 = 6 x (3 x 100) = (6 x 3) x 100
   = 18 x 100 = 1,800
   k) 8 x 700 = 8 x (7 x 100) = (8 x 7) x 100
   = 56 x 100 = 5,600
   l) 9 x 3,000 = 9 x (3 x 1,000) = (9 x 3) x 1,000
   = 27 x 1,000 = 27,000
   m) 3 x 2,000 = 3 x (2 x 1,000) = (3 x 2) x 1,000
   = 6 x 1,000 = 6,000
5. a) 10 b) 100
   c) 4 d) 6
   e) 50 f) 300
   g) 12 h) 32
   i) 40 , 240 j) 20 , 120
   k) 120 x 10 = 1,200 l) 2 , 9 , 54
   m) 8 , 4 , 320 n) 20 , 30 , 600
6. a) 7 b) 16
   c) 25 d) 100
   e) 900 f) 16
   g) 100 h) 5
7. a) > b) = c) >
   d) = e) < f) <
   g) < h) < i) =
   j) = k) < l) >
8. a) → 2 b) → 5 c) → 1
   d) → 3 e) → 4
9. 3 x 4 x 3 = (3 x 4) x 3 = 12 x 3 = 36 pens
10. 4 x 4 x 2 = 4 x (4 x 2) = 4 x 8 = 32 books
11. 5 x 4 x 3 = (5 x 4) x 3 = 20 x 3 = 60 bottles
12. 10 x 5 x 8 = 10 X (5 x 8) = 10 x 40 = 400 books

Assessment 3

on Lessons (6&7)

1. a) 100 b) 330,003,000
   c) 1,000 d) 10 e) 5
2. a) 2 x 5 b) 200
   c) 900,000,00 d) 800,603,402
   e) 3 ، 10 ، 24 ، 240
3. 405,000,002 ، 405,200,000 ، 450,000,002 ، 450,200,000
4. a) (3 x 3) x 3 = 9 x 3 = 27
   b) (4 x 4) x 3 = 16 x 3 = 48

Assessment on Concept 2

1. a) (2 X 3) X 5 = 2 X (3X5)
   b) 7 c) 1
2. a) 5 X 14 b) 9
   c) (4 X 5) X 3 = 20 X 3 = 60
3. a) c = 1,000 b) 640 c) 9

Exercises on Unit 6

Lessons 1&2

1. a) 1 , 2 , 5 , 10
   b) 1 , 2 , 3 , 4 , 6 , 12
   c) 1 , 3 , 5 , 15
   d) 1 , 2 , 3 , 6 , 9 , 18
   e) 1 , 2 , 4 , 5 , 10 , 20
   f) 1 , 2 , 3 , 4 , 6 , 8 , 12 , 24
   g) 1 , 2 , 3 , 4 , 6 , 9 , 12 , 18 , 36
   h) 1 , 2 , 4 , 5 , 8 , 10 , 20 , 40
   i) 1 , 17
   j) 1 , 3 , 5 , 9 , 15 , 45
2. a) 1 , 13
   b) 1 , 2 , 3 , 4 , 5 , 6 , 10 , 12 , 15 , 20 , 30 , 60
   c) 1 , 2 , 4 , 7 , 14 , 28
   d) 1 , 2 , 7 , 14
   e) 1 , 2 , 5 , 10 , 25 , 50
   f) 1 , 2 , 4 , 8 , 16 , 32
3. Answer by yourself.
4.

Number	Factors of the Number	Number of Factors	Prime Number or Composite
6	1 ، 2 ، 3 ، 6	4	Composite number
19	1 ، 19	2	Prime number
22	1 ، 2 ، 11 ، 22	4	Composite number
31	1 ، 31	2	Prime number
14	1 ، 2 ، 7 ، 14	4	Composite number
30	1 ، 2 ، 3 ، 5 ، 6 ، 10 ، 15 ، 30	8	Composite number
25	1 ، 5 ، 25	3	Composite number
23	1 ، 23	2	Prime number
11	1 ، 11	2	Prime number

5.

Number	The Factors of the Number				
	2	3	6	9	5
8	✓	✗	✗	✗	✗
9	✗	✓	✗	✓	✗
25	✗	✗	✗	✗	✓
12	✓	✓	✓	✗	✗
15	✗	✓	✗	✗	✓
10	✓	✗	✗	✗	✓
18	✓	✓	✓	✓	✗
27	✗	✓	✗	✓	✗
28	✓	✗	✗	✗	✗
32	✓	✗	✗	✗	✗
30	✓	✓	✓	✗	✓
36	✓	✓	✓	✓	✗
45	✗	✓	✗	✓	✓
60	✓	✓	✓	✗	✓
90	✓	✓	✓	✓	✓

6. 2 , 3 , 5 , 7 , 11 , 13 , 17 , 19
   23 , 29 , 31 , 37
   41 , 43 , 47 , 53 , 59
   61 , 67 , 71 , 73 , 79
   83 , 89 , 97
7. a) 37 b) 24 c) 21
   d) 31 e) 59 f) odd , 2
   g) 2 h) 3 i) 2
   j) 41 , 43 , 47 k) prime number l) 2
   m) one factor n) more than two factors
9. a) 17 b) 1 c) 2

ⓓ 3 ⓔ 2 ⓕ two factors.
ⓖ prime. ⓗ one factor only.
ⓘ more than two factors.
ⓙ two factors only. ⓚ 4 ⓛ 5
ⓜ 20 ⓝ odd.

Assessment 1
on Lessons (1&2)

1. ⓐ 6,217 ⓑ 4,619
ⓒ 40,000 ⓓ 32 , 3,200
2. ⓐ 2 ⓑ 45,040,005
ⓒ Associative. ⓓ 15
ⓔ more than two factors.
3. ⓐ 3 ⓑ 800,302,005
ⓒ 1,000 ⓓ 61 , 67 ⓔ 3
4. ⓐ 1 , 2 , 4 , 5 , 8 , 10 , 20 , 40
ⓑ 1 , 2 , 4 , 7 , 14 , 28

Lesson 3

1. ⓐ (GCF) = 5 ⓑ (GCF) = 6
ⓒ (GCF) = 2 ⓓ (GCF) = 4
ⓔ (GCF) = 7 ⓕ (GCF) = 12
ⓖ (GCF) = 16 ⓗ (GCF) = 12
2. • Largest number of groups (GCF) = 7
Number of girls in each group = 28 ÷ 7 = 4 girls.
Number of boys in each group = 21 ÷ 7 = 3 boys.
3. • Largest number of snacks (GCF) = 8
Number of croissants = 24 ÷ 8 = 3 croissants.
Number of sweets = 16 ÷ 8 = 2 sweets.
4. • Largest number of flower arrangements (GCF) = 7
Number of red flowers = 21 ÷ 7 = 3 flowers.
Number of blue flowers = 14 ÷ 7 = 2 flowers.

Assessment 2
on Lesson (3)

1. ⓐ 10,000,000 – 1,000 ⓑ 3
ⓒ 45,000 ⓓ 30 x 80 = 2,400
ⓔ 600,420,320
2. ⓐ 7 ⓑ 4 ⓒ 100
ⓓ 20 ⓔ 5
3. (GCF) = 15. 4. 5 x 20 = 100 minutes.

Assessment on Concept 1

1. ⓐ 3 ⓑ 14 ⓒ 7
2. ⓐ 3 ⓑ prime ⓒ 1
3. ⓐ → 2 ⓑ → 3 ⓒ → 1
4. Number of groups (GCF) = 5 groups
Ducks = 15 ÷ 5 = 3 ducks
Chickens = 25 ÷ 5 = 5 chickens

Lessons 4-6

1. & 2. Answer by yourself.
3. 0 , 6 , 12 , 18 4. 0 , 20 , 40
5. 0 , 42 , 84 6. 0 , 12 , 24 , 36 , 48
7. 0 , 10 , 20 , 30 , 40 8. 0 , 24 , 48
9. ⓐ 0, 8, 16, 24, 32
ⓑ 0, 9, 18, 27, 36
ⓒ 0, 7, 14, 21, 28
ⓓ 6, 12 ⓔ 36, 72 ⓕ 40, 80
ⓖ 42, 6, 7, 6, 7, 42 ⓗ 5 x 9, 45, 5, 9, 45
ⓘ 24, 24, 8,3, 24 ⓙ 24 ⓚ 30
ⓛ 45 ⓜ 21
ⓝ 8 is a multiple of 4 and 2.
or 2 and 4 are factors of 8.
ⓞ 10 is a multiple of 2 and 5.
or 2 and 5 are factors of 10.
ⓟ 60 , 72 , 84
10. ⓐ 2 ⓑ 16 ⓒ 12
ⓓ 24 ⓔ multiple. ⓕ 21
ⓖ 24 ⓗ 20 ⓘ 15
ⓙ 0

Assessment 3
on Lessons (4-6)

1. ⓐ 8,000,080 ⓑ 4
ⓒ Millimeter ⓓ 400 ⓔ 4 milliard
2. ⓐ Millions ⓑ 100,000 ⓒ 46,000
ⓓ 5 ⓔ 24
3. Common multiples: 0 , 12 , 24
4. 10 : 00 – 8 : 45 = 1 : 15.

Assessment on Concept 2

1 a 0 b 17 c 3
2 a 6 , 1, 2, 3, 4, 6, 12 b 8
c 36
3 a → 2 b → 3 c → 1
4 a 1 4 , 6 2 4 , 6 , 24
b 5 X 6 = 30 c 4 X 7 = 28

Exercises on Unit 7

Lesson 1

1 a 105 b 70 c 126
d 130 e 78 f 172
g 162
2 a 492 b 228 c 504
d 644 e 152 f 135
g 171 h 891 i 180
j 276
3 110 4 522 5 510

Assessment 1
on Lesson (1)

1 a Ten Thousands b 3 c 10
d 48 e 10
2 a 6 b 5,000 c 6,542
d 8 X 1,000,000 + 5 X 10,000 + 6 X 100 + 7 X 1
e 4 times.
3 a 26 X 5 = 100 + 30 = 130
b 69 X 3 = 180 + 27 = 207
4 a 623 b 448

Lesson 2

1 a 8 , 9 b 3 , 4 c 3 , 6 , 5
d (6 X 3) + (6 X 4) + (6 X 5)
e (6 X 200) + (6 X 90) + (6 X 3)
f (8 + 9 + 3) = (6 X 8) + (6 X 9) + (6 X 3)
g 2 X (700 + 30 + 9)
2 a 124 b 414 c 2,910
d 2,208 e 2,492 f 7,692
g 29,358 h 27,244 i 18,360
j 24,015
3 a 1,000 b 3,072 c 5,661
d 4,942 e 11,825 f 7,698
g 16,398 h 14,035
4 1280 X 3 = 3,840 5 525 X 7 = 3,675
6 930 X 5 = 4,650 7 185 X 8 = 1,480

Assessment 2
on Lesson (2)

1 a n = 3 X 8 b 36
c 3,030,000,300 d Commutative e 5,000
2 a 36 b 500 c 45,000
d 5 e 9 : 40
3 a 864 b 1960 4 45,512

Lessons 3&4

1 a 4 b 564 c 9,532
d 6,483 e 9,050 f 6,600
g 4003 h 700 + 80 + 5
i 900 + 20 + 7 j 7,000 + 800 + 50 + 9
k 8,000 + 300 + 20 + 4
l 6,000 + 200 + 1
m 300 + 9 n 9,000 + 6
o 8,000 + 200 p 3,000 + 10
2 a 1,356 b 2,900 c 1,308
d 7,488 e 3,762 f 55,368
g 8,724 h 36,168
3 a 280 b 345 c 159
d 1,664 e 5,010 f 1,195
g 10,472 h 13,188 i 40,984
j 1,218 k 3,621 l 12,032
4 a 135 , 150 b 702 , 720
c 2,136 , 2,400 d 27,248 , 24,000
e 40,070 , 40,000
5 a > b = c <

(d) = (e) > (f) <

(g) < (h) < (i) =

6. 135 X 6 = 810 pounds

7. 6,250 X 8 = 50,000 pounds

8. 24 X 7 = 168 hours

Assessment 3

on Lessons [3&4]

1. (a) 10 (b) 473 (c) 4
   (d) 5,023 (e) 16
2. (a) 6 (b) 40 (c) 17
   (d) Thousands (e) 2 , 50 , 400
3. (a) > (b) = (c) = (d) < (e) >
4. 54,005,000 , 54,000,500 , 45,500,000 , 45,000,050
5. 64 X 8 = 512 seats

Lesson 5

1. (a) 1,640 (b) 750 (c) 2,280
   (d) 3,420 (e) 5,760 (f) 1,480
2. (a) 7,470 (b) 2,100 (c) 960
   (d) 680 (e) 5,160 (f) 3,400
3. (a) 1,350 (b) 1,360 (c) 2,320
   (d) 3,780 (e) 2,970 (f) 4,400
4. (a) 1,360 (b) 6,000 (c) 8,640
   (d) 2520 (e) 1,050 (f) 1,000
5. (a) 720 (b) 1,120 (c) 1,000
   (d) 3,780 (e) 4,400 (f) 2,880
   (g) 5,700 (h) 3,600
6. 95 X 20 = 1,900 piasters
7. 20 X 35 = 700 kilograms
8. 65 X 20 = 1,300 pounds

Assessment 4

on Lesson [5]

1. (a) 81 (b) 70 (c) 120
   (d) Distributive (e) 86,000
2. (a) 59 (b) 1, 3, 7, 21 (c) 5,000
   (d) 8 (e) 6,030,403
3. (a) 61,100 (b) 55,513 (c) 3128
   (d) 1,350
4. 20 X 18 = 360 apartments

Assessment on Concept 1

1. (a) 4 (b) 7 (c) 290
2. (a) 1,074 (b) 36 X 5 = 180 (c) 3,600
3. (a) → 2 (b) → 3 (c) → 1

Lessons 6&7

1. (a) 8 , 4 , 2 , 0 (b) 9 , 2 , 4 , 1
   (c) 15 , 5 , 3 , 0 (d) 28 , 4 , 7 , 0
   (e) 36 , 6 , 6 , 0 (f) 35 , 8 , 4 , 3
   (g) 25 , 4 , 6 , 1 (h) 31 , 5 , 6 , 1
   (i) 42 , 8 , 5 , 2 (j) 48 , 6 , 8 , 0
2. (a) 30 (b) 8,000 (c) 300
   (d) 3,000 (e) 90 (f) 80,000
   (g) 360 (h) 90,000 (i) 400
   (j) 700,000
3.

	Equation	Related Fact	Quotient
a	400 ÷ 4	4 ÷ 4 = 1	100
b	8,000 ÷ 2	8 ÷ 2 = 4	4,000
c	90,000 ÷ 3	9 ÷ 3 = 3	30,000
d	420 ÷ 7	42 ÷ 7 = 6	60
e	350 ÷ 5	35 ÷ 5 = 7	70
f	3,600 ÷ 4	36 ÷ 4 = 9	900
g	27,000 ÷ 9	27 ÷ 9 = 3	3,000
h	240,000 ÷ 8	24 ÷ 8 = 3	30,000
i	60,000 ÷ 3	6 ÷ 3 = 2	20,000
j	18,000 ÷ 6	18 ÷ 6 = 3	3,000

4. (a) > (b) > (c) >
   (d) = (e) > (f) >
   (g) > (h) < (i) <
   (j) <
5. (a) 800 (b) 7,000 (c) 40
   (d) 20,000 (e) 5,000
6. 15 ÷ 4 = 3 R 3
7. 21 ÷ 5 = 4 R 1
8. (a) 32 ÷ 9 = 3 R 5 (b) 32 ÷ 3 = 10 R 2
   (c) 32 ÷ 4 = 8 R 0 (d) 32 ÷ 7 = 4 R 4
9. 52 ÷ 6 = 8 R 4 , 9 boxes are needed

10 12,000 ÷ 3 = 4,000 pounds
11 24,000 ÷ 6 = 4,000 pounds

Assessment 5
on Lessons (6&7)

1 a 300 b < c 8
d 8,045 e 50
2 a 9 b 4,000 + 200 + 50 + 6
c 1 , 2 , 4 , 7 , 14 , 28
d 2 e 4,000
3 a 45 , 6 , 7 , 3 b 32 , 8 , 4 , 0 c 14 , 2 , 7 , 0
d 23 , 5 , 4 , 3 e 68 , 8 , 8 , 4
4 240 ÷ 8 = 30 students

Lesson 8

1 a 14 b 16 c 49
d 18 R 2 e 12 R 4 f 13 R 3
g 146 R 3 h 146 i 123
j 800 k 90
2 a 14 R 5 b 109 c 23
d 123

Assessment 6
on Lesson (8)

1 a 0 b 3 c 5,000,000
d 4,015 e 20
2 a 1 , 2 , 4 , 8 , 16 b Millions
c 9 d 30 e 9,025,003
3 a 19 b 24
4 85 ÷ 5 = 17 candy bars

Lesson 9

1 a 13 b 18 c 11 R 4
d 156 e 144 R 1 f 275
g 1,614 h 717 i 1,358 R2
j 507 k 701 R 3 l 1,201
2 a 92 ÷ 4 b 53 ÷ 3 c 858 ÷ 6
d 688 ÷ 5 e 2,802 ÷ 6
3 96 ÷ 8 = 12 m

4 1,548 ÷ 6 = 258
5 175 ÷ 5 = 35 tourists.

Assessment 7
on Lesson (9)

1 a 50,000 b > c 9
d millimeter e 1,000
2 a 20 b 44 c 3
d 6 e 26
3 a 18 b 49 c 590 R 2
4 72 ÷ 6 = 12 students

Lessons 10&11

1 a 60 and 80 , 30 and 40
b 60 and 90 , 20 and 30
c 120 and 160 , 30 and 40
d 100 and 150 , 20 and 30
e 300 and 600 , 100 and 200
f 700 and 1,400 , 100 and 200
g 2400 and 3,000 , 400 and 500
h 3200 and 4,000 , 400 and 500
i 5,000 and 10,000 , 1,000 and 2,000
j 6,000 and 9,000 , 2,000 and 3,000
2 a 13 b 16 c 23 R2 d 34
e 75 f 49 R3 g 138 h 248
i 136 R2 j 157 k 248 R 4 l 805
m 4878 n 709 o 3008
3 a 17 , 10 and 20 , 2 , 17
b 27 , 20 and 30 , 2 , 27
c 124 , 100 and 200 , 3 , 124
d 714 , 700 and 800 , 3 , 714
e 3,275 R 2 , 3,000 and 4,000 , 4 , 3,275 R 2
4 784 ÷ 7 = 112 passengers
5 567 ÷ 3 = 189 books
6 144 + 216 = 360 , 360 ÷ 8 = 45 students

Assessment 8
on Lessons (10&11)

1 a 50,000 b > c 1,000 d 110 e 5
2 a 20 b 27 c 7,089 d 23 e 65

3 a 23 b 68 c 1,213

4 215 ÷ 5 = 43 rooms

Assessment on Concept 2

1 a 2 b 278 c 39

2 a 5 b 420 , 7 c 900

3 a → 2 b → 3 c → 1

Exercises on Unit 8

Lessons 1&2

1 a 27 b 36 c 0
d 5 e 5 f 10
g 10 h 22 i 10
j 23 k 90 l 240
m 3 n 1 o 10
p 4 q 2 r 30
s 48 t 40

2 a 47 b 50 c 27
d 23 e 25 f 12
g 3 h 4 i 11
j 12 k 11 l 30
m 1 n 1 o 7
p 13

3 a 23 b 8 c 180
d 2

4 a 51 b 28 c 11
d 39 e 8 f 6
g 1 h 3

5 a 86 b 9 c 16
d 21 e 10 f 52
g 18 h 3

6 a 2 b 80 c 10
d 121 e 2 f 20

7 a 194 – 50 = 144 persons , 144 ÷ 9 = 16 microbuses
b 18 X 6 = 108 balloons , 108 ÷ 8 = 13 R 4 balloons
c 8 X 6 = 48 eggs , 48 – 38 = 10 eggs
d 12 + 28 + 40 = 80 m , 80 ÷ 4 = 20 m
e 42 ÷ 3 = 14 , 14 – 4 = 10 biscuits
f **Model (A):** 15 X 48 = 720 nails,
15 X 24 = 360 metal rings,
15 X 21 = 315 pieces of wood
Model (B): 7 X 52 = 364 nails,
7 X 32 = 224 metal rings,
7 X 26 = 182 pieces of wood
Total: 720 + 364 = 1,084 nails,
360 + 224 = 584 metal rings,
315 + 182 = 497 pieces of wood

Assessment on Concept 1

1 a 16 b 32 c 64
d 500 e Associative

2 a 7 b 12 c 11
d 1 e 123

3 (4 X 6) + (3 X 5) = 24 + 15 = 39 pen

Guide Answers
Assessments on Units

Assessment on Unit 1

First

1 (c) 2 (c) 3 (a) 4 (a) 5 (c)
6 (d) 7 (c) 8 (b) 9 (b) 10 (b)

Second

1 Hundred Millions 2 20
3 Two milliard, seven million, two hundred twenty five thousand, one hundred two
4 Ten Millions 5 500,000
6 3,000
7 1,000,000 – 100,000 – 1,000 – 10 – 1
8 9,705,030,006 9 650,000 10 44,500

Third

1 < 2 < 3 > 4 < 5 =

Fourth

Standard form	Order
30,000,450	2
3,000,405	1
300,000,450	4
3,000,000,450	5
30,450,000	3

Fifth

a 5,599 , 5,600
b 4,985 , 5,000
c 90,432 , 90,400
d 83 , 100

Assessment on Unit 2

First

1 (c) 2 (b) 3 (a) 4 (c)
5 (a) 6 (b) 7 (a) 8 (b)
9 (b) 10 (c)

Second

1 21 , Commutative 2 13 , 45 , 25 , Associative
3 0 , Additive Identity Element
4 110,710 5 235,553 6 242
7 142 8 738 9 242
10 5,831 ≈ 6,000

Third

a $x = 6,245 + 5,375$ $x = 11,620$
b $x = 1,025 - 675$ $x = 350$
c 345 + 290 = 635 m
9,150 – 635 = 8,515 m

Accumulative Assessments 1 on Units 1-2

1 a 7 , 0 , 21 b 243
c 9, Identity Element
d 500,000
2 a 4000 b Identity Element
c 5023 d thousand
3 a < b >
c < d =
4 a Total = 458 + 367 = 825 students
b Total she counted = 1,525 + 19,750 + 3,705
= 24,980 ants
Number of ants she needs to count
= 30,520 – 24,980 = 5,540 ants
c 1 470,595 2 29,112

Accumulative Assessments 2 on Units 1-2

1. ⓐ 10,000 ⓑ 27, Commutative
   ⓒ 243 ⓓ 6,815,400,030
2. ⓐ 800,008,000 ⓑ

4,000	
3.600	p

   ⓒ 50,000 ⓓ 48
3. ⓐ = ⓑ > ⓒ < ⓓ =
4. ⓐ 6,000,000 + 200,000 + 50,000 + 4,000 + 800 + 30 + 5
   ⓑ 6,250-4630 = 1620
   ⓒ Order: 345,456 , 345,465 , 354,456 , 354,465

Assessment on Unit 3

First

1. (a) 2. (d) 3. (a)
4. (d) 5. (c) 6. (c)
7. (c) 8. (d) 9. (b)
10. (a)

Second

1. 1,025 2. 20 , 15 3. 15 , 40
4. 400 , 20 5. 4,000 6. 20
7. 500,000 8. 9:13 9. 00:23
10. 4 , 10

Third

1. > 2. > 3. < 4. =

Fourth

4 dm , 400 cm , 40 m , 4 km

Fifth

120 + 30 = 150 minutes
150 + 150 + 150 = 450 minutes

Accumulative Assessments 1 on Units 1-3

1. ⓐ 100,000 , 100 , 10
   ⓑ 1200 ⓒ 50 , 65
   ⓓ 10,000
2. ⓐ 635 + 492 = 492 + 635 ⓑ 0
   ⓒ 18 ⓓ mass
3. ⓐ > ⓑ < ⓒ > ⓓ =
4. ⓐ 2,000,000 +200,000 + 30,000 + 5,000 + 600 + 20 + 4
   ⓑ 2000 m = 20,000 dm = 200,000 cm
   ⓒ 5:3 5 + 1:1 5 = 6:5 0
   ⓓ 3:4 5 + 2:1 5 = 5:60 = 6:00

Accumulative Assessments 2 on Units 1-3

1. ⓐ 50 ⓑ 15,5 ⓒ 901 ⓓ 0
2. ⓐ 8000 ⓑ 765,430
   ⓒ one milliard ⓓ ring
3. ⓐ < ⓑ = ⓒ = ⓓ <
4. 1 b 2 d 3 a 4 c
5. ⓐ 50L = 50,000 mL 35L + 135mL = 35,135 mL
   we need = 50,000 – 35,130 = 14,850 mL
   ⓑ 65,250 g

Assessment on Unit 4

First

1. (a) 2. (b) 3. (c) 4. (a) 5. (d)
6. (c) 7. (a) 8. (a) 9. (a) 10. (c)

Second

1. 50 m 2. 24 cm 3. 49 4. 32 5. 14
6. 34 7. 9 8. 6 9. 16 10. 32

Third

1. a) A = 24 cm², P = 20 cm
   b) A = 16 cm², P = 16 cm
   c) A = 22 cm², P = 26 cm
2. P = (40 + 15) X 2 = 110 cm

Accumulative Assessments 1 on Units 1–4

1. a) 24 b) 22 c) 326 d) 10,000
2. a) 24 b) 4,015 c) 0 d) 12,015,020
3. a) > b) = c) > d) =
4. a) 30 x 4 = 120 cm
   b) 10,000 - (5,250 + 2 ,750) = 2,000
   c) Per. = (10 + 5) x 2 = 30 cm
   area = 10 x 5 = 50 cm²

Accumulative Assessments 2 on Units 1–4

1. a) 55 b) 75,000
   c) 80 + 40 = 120 d) (L + W)
2. a) 45,000 b) 100,000
   c) Millimeters d) 64
3. a) < b) = c) < d) =
4. a) Area = 8 x 8 = 64 cm²
   b) 1648

Assessment on Unit 5

First

1. (c) 2. (d) 3. (a) 4. (b) 5. (a)
6. (a) 7. (c) 8. (b) 9. (a) 10. (b)

Second

1. 20 2. 9 + 9 + 9 3. 36 = 4n
4. 7 5. 20 6. 40,000
7. 50 8. 40 X 6 = 240 9. 10 , 180
10. 400 , 3,600

Third

1. m = 8 X 6
   m = 48
2. 24 = 8 n
   n = 24 ÷ 8 = 3
3. 21 = a X 3
   a = 21 ÷ 3 = 7
4. χ = 6 X 7
   χ = 42

Fourth

a) 20 = 5χ
   χ = 20 ÷ 5
   = 4 crayons.
b) 3 X 4 = 4 X 3
   2 X 6 = 6 X 2
c) 3 X 5 X 2 = 3 X (5 X 2) = 3 X 10 = 30

Accumulative Assessments 1 on Units 1–5

1. a) 540 b) Commutative
   c) 902 d) 8,999,999
2. a) Ten thousand b) 123,563
   c) 5 d) 3
3. a) = b) > c) > d) <
4. a) (5 + 2) x 2 = 14 m
   b) 65,000+250 = 65,250 g

Accumulative Assessments 2 on Units 1–5

1. a) 0 b) 10 , 8
   c) 16 d) 15 , 5 x 3 = m
2. a) 4,605,090,015 b) perimeter
   c) 8 x 4 d) 7
3. a) < b) < c) > d) <
4. a) Ola = 5x3 = 15 years
   b) Area = 8 x 4 = 32 km²
   c) 50,000 – 35,130 = 14,870 mL

Assessment on Unit 6

First

1. (c) 2. (b) 3. (c) 4. (d) 5. (b)
6. (c) 7. (a) 8. (c) 9. (c) 10. (d)

Second

1. 1 , 2 , 7 , 14
2. 3
3. 23 , 29 , 31 , 37
4. prime
5. 11
6. 0 , 2 , 4 , 6 or 8
7. 0 , 6 , 12 , 18
8. 24 , 36 , 48
9. multiple
10. 7

Third

(GCF) = 8

Fourth

Common multiples are: 0 , 24 , 48

Fifth

6 o'clock

Sixth

(GCF) of (12, 18, 24) is 6

Red balloons = 12 ÷ 6 = 2 balloons

Blue balloons = 18 ÷ 6 = 3 balloons

White balloons = 24 ÷ 6 = 4 balloons

Accumulative Assessments 1 on Units 1-6

1. (a) 72 , 5 (b) 1,333 (c) 8,999,999 (d) 24
2. (a) 400,000 (b) 8,000 (c) P= 4 x S (d) 25
3. (a) < (b) > (c) < (d) >
4. (a) 3 x 7 = 21 pounds
   (b) A = 6 x 4 = 24 cm^2
   (c) 15 = 5 x m m = 15 ÷ 5 = 3 times
   (d) 4 x 1,000 = 4,000 mL

Accumulative Assessments 2 on Units 1-6

1. (a) 4,250 (b) 40 (c) 9 (d) 6
2. (a) 300,000,000 (b) 366 (c) 25 (d) 21
3. (a) = (b) < (c) < (d) >
4. (a) Used water = 125,500 + 250,600
   = 376,100 mL
   Water left = 500,000 – 376,100
   = 123,900
   (b) 100 ÷ 2 – 30 =20 cm
   (c) 3 x 7 = 21 pounds

Assessment on Unit 7

First

1. (d)
2. (a)
3. (b)
4. (c)
5. (a)
6. (c)
7. (a)
8. (c)
9. (b)
10. (a)

Second

1. 50 , 7
2. 72,000
3. 5,000
4. 5,000
5. 1,600
6. 30 X 20 = 600
7. 1
8. 6
9. 236
10. 1,000

Third

1. 234
2. 1,960
3. 9,360
4. 1,440
5. 23
6. 169 R4

Fourth

1. 588
2. 1,015
3. 25,200
4. 2,030
5. 36
6. 225

Fifth

1. 174
2. 375
3. 672
4. 14
5. 109
6. 609

Sixth

1. 315
2. 725
3. 20,344

Seventh

(a) 45 X 5 X 2 = 45 X (5 X 2)
= 45 X 10 = 450 students

(b) 290,000 – 80,000 = 210,000 pounds
210,000 ÷ 7 = 30,000 pounds

(c) 30 X 24 = 720 hours

(d) 3,168 ÷ 8 = 396 pounds

Accumulative Assessments 1 on Units 1-7

1. a) 1, 2, 4, 7, 14, 28 b) 5,000
   c) 360 d) 40,000+4,000+300+40+9
2. a) 60 b) Identity Element
   c) 62,140
3. a) = b) = c) < d) >
4. 3 x 1,280 = 3 x (1,000 + 200 + 80)
   = (3 x 1,000) + (3 x 200) + (3 x 80)
   = 3,000 + 600 + 240
   = 3,840 cm

Accumulative Assessments 2 on Units 1-7

1. a) 6 , Commutative b) 200 + 300 = 500
   c) 600 d) 6
2. a) Ten Thousands b) Commutative
   c) 7 is a factor of 49 d) 6
3. a) = b) = c) > d) =
4. a) 90 x 20 = 1,800
   b) 7 x 525 = 7 x (500 + 20 + 5)
   = (7 x 500) + (7 x 20) + (7 x 5)
   = 3,500 + 140 + 35
   = 3,675 piasters
   c) 64 x 8 = 512 seats

Assessment on Unit 8

First

1. (c) 2. (a) 3. (a) 4. (a) 5. (a)
6. (b) 7. (b) 8. (d) 9. (a)

Second

1. 19,200 2. 460 3. 124
4. 11,658 5. 45,858

Third

1. = 2. < 3. > 4. =

Fourth

a) → 4 b) → 5 c) → 2 d) → 3 e) → 1

Fifth

1. 7 2. 6 3. 39
4. 24 + 21 = 45 students.
   45 ÷ 5 = 9 students.

Accumulative Assessments 1 on Units 1-8

1. a) 3 + 5 = 8 b) quotient
   c) 2 d) 7
2. a) 650,013,526 b) 98
   c) 22 d) 473
3. a) > b) = c) > d) <
4. a) 24 x 7 = 168 hours
   b) Factors of 36 are 1 , 2 , 3 , 4 , 6 , 9 , 12 , 18 , 36
   Factors of 48 area 1 , 2 ,3 , 4 , 6 , 8 , 12 , 16 , 24 , 48
   GCF = 18
   c) Price = 189 ÷ 3 = 63 pounds

Accumulative Assessments 2 on Units 1-8

1. a) 26 b) 1 , 23
   c) 8 d) 200
2. a) 4,053,004,503 b) Identity Element
   c) divisor d) 8
3. a) < b) < c) > d) =
4. a) 95 x 4 = (4 X 90) + (4 X 5)
   360 + 20 = 380
   b) 15 X 9 = 135 pieces
   c) 5
   d) 18 x 20 = 360 apartments

Guide Answers

Final Revision

First

1. 7
2. 3 milliard + 400 million + 3 thousand + 25
3. 275,000,000
4. 10,234
5. 73,210
6. 525
7. 6,000,000
8. 400
9. 205,678
10. thirty-five million, two hundred thousand, eight hundred ten
11. 6,060,060,660
12. 3,050,012,245
13. 305,700,016
14. <
15. One milliard
16. 900,000
17. 100
18. 4
19. 0
20. 61,901,478
21. 3 x 56,567
22. 5
23. Commutative
24. Associative
25. Identity Element
26. c
27. 366
28. 0
29. 6,000,000
30. Commutative
31. 18
32. centimeters
33. centimeters
34. <
35. 2 km
36. desk
37. capacity
38. 6
39. 400
40. 30
41. 50
42. 5,000
43. 20,000
44. Commutative
45. 13,030
46. 94
47. 480
48. 8,000
49. 6 kg , 500 g
50. 6:50
51. 5 kg
52. 7,425
53. 5,045
54. 180
55. 49
56. 9
57. meters
58. 49 cm^2
59. S x S
60. L + w
61. S X 4
62. (L + W) X 2
63. 40
64. 7
65. 5
66. 21
67. 4
68. 9
69. multiple
70. 9 × 6 = 6 × 9
71. 24
72. 4
73. 50
74. 1,000
75. 17
76. prime
77. 20
78. more than two factors
79. 2
80. 24
81. 5
82. all of them
83. 27
84. 11
85. 2
86. 1
87. 2
88. 2
89. 6
90. 9
91. 10
92. quotient
93. 365 ÷ 5 = 73
94. 473
95. 4
96. 16
97. 34 X 25
98. 22
99. <

Second

1. 25,250,200
2. 7 , 0 , 21
3. seventy-seven million, two thousand, two hundred five
4. 9
5. 60,000
6. 10,000
7. 4,006,020,326
8. Five milliards, five millions, fifty thousand, five hundreds
9. 5,768,130,000
10. 5,000
11. 90,000
12. hundred thousand

13. 7
14. 9,865,432
15. 3,000 , 4
16. 1,341,806
17. 85 , associative
18. 9,745,122
19. zero
20. 1
21. 62,140
22. 10,901
23. 80,060
24. capacity
25. mass
26. time
27. 10,000
28. 3,500
29. 180
30. 1 , 35
31. 5,700
32. 340
33. 5:22
34. 12:05
35. 17
36. 50
37. 4
38. 24
39. 16 m^2
40. 6 m
41. 4 cm
42. (W + L) X 2
43. 20 cm
44. 5 X 3 = b
45. a = 4 X 9
46. 11
47. 7
48. 3 factors
49. itself
50. 1
51. 27
52. 24
53. 7
54. 48
55. 7
56. 6
57. 564,000
58. 17
59. 6
60. 300,000
61. (6 X 8) X 10 = 48 X 10 = 480
62. 18 , 25
63. 800
64. 6
65. 30 – 20 = 10

Third

1. 7,534,786 , 8,092,561 , 8,650,336 , 9,208,111
2. 7 mm , 7 m , 7,000 cm , 7 km
3. a 572,600 b 600,000
4. 5 days
5. 1,028 – 542 = 486 days
6. 800 – 675 = 125 km
7. 142 + 165 = 307
8. A = 300 – 125 = 175
9. 20 cm
10. 26 cm^2
11. P = S X 4 = 6 X 4 = 24 cm
12. A = 6 X 2 = 12 cm^2 P = (6 + 2) X 2 = 16 cm
13. P = (7 + 4) X 2 = 22 cm
14. 50,000 – 20,000 = 30,000 ml = 30 L
15. two hours and 15 minutes
16. 4:30 + 1:25 = 5:55
17. y = 9,232 – 3,232 = 6,000
18. 5 X 2 = 10 apples
19. 10:58 + 6:50 = 4:08
20. one liter and half
21. 3,256 – 2,804 = 452 pounds
22. 250,000 + 39,000 = 289,000 PT
23. 9 , 18 , 27 , 36
24. 3 X 100 = 300 pounds
25. a 384 b 112
26. 5 X 9 = 45 km
27. (2 X 5) X 14 = 10 X 14 = 140
28. 151 R2
29. 48 ÷ 8 = 6 boxes
30. 72 ÷ 8 = 9 teams
31. 16 ÷ 8 = 2 m = 200 cm
32. 8 X 235 = 1,880
33. 5,000 X 6 = 30,000 m

34 Factors of 16 are 1 , 2 , 4 , 8 , 16

Factors of 20 are 1 , 2 , 4 , 5 , 10 , 16

Common factors are 1 , 2 , 4

GCF = 4

35 1 , 2 , 3 , 4 , 6 , 9 , 12 , 18 , 36

it is a composite number

36 12 = 1 , 2 , 3 , 4 , 6 , 12

24 = 1 , 2 , 3 , 4 , 6 , 8 , 12 , 24

GCF = 12

37 13 + 9 = 22

38 1 , 2 , 3 , 6 , 9 , 18

39 67 + 3 - 20

= 70 − 20 = 50

40 7 + 6 + 2

13 + 2 = 15

Guide Answers — Model Exams

(1) Cairo - Al Basatin District

First

1. 5
2. 100
3. 24
4. 2
5. 450
6. 3
7. 3,012

Second

1. 12
2. 36
3. 7,500
4. 1,355
5. 5,000
6. 1
7. 6
8. 36

Third

1. 613
2. 800,000
3. 116
4. 19,568,742
5. associative
6. 5
7. 5,200

Fourth

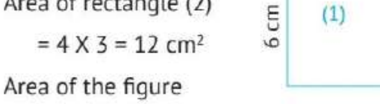
1.

12	
1	12
2	6
3	4

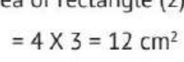
18	
1	18
2	9
3	6

GCF = 6

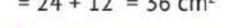
2. 20 , 30 , 40 , 50
3. The number of ants = 1,523 + 1,346 = 2,869 ants
4. Area of rectangle (1) = 6 X 4 = 24 cm^2



Area of rectangle (2) = 4 X 3 = 12 cm^2



Area of the figure = 24 + 12 = 36 cm^2



(2) Giza - (Al Ayyat District)

First

1. 1,692
2. 71
3. 6,000,004
4. 4
5. 64
6. 4,000
7. 14,000

Second

1. 7
2. 1
3. 2,400
4. 1,620
5. 35
6. 10
7. 1,5,7,35
8. 1

Third

1. commutative
2. 50
3. 3
4. 2
5. 600,000
6. 500
7. 24

Fourth

1. 374,300 – 537,400 – 745,300 – 753,400
2. k = 7,402 + 5,310 = 12,712
3. 13 + 36 ÷ 4 = 13 + 9 = 22
4. Ali paid = 12 X 9 = 108 LE

(3) Giza (El Dokky District)

First

1. 2
2. 2
3. 50
4. 3
5. 4
6. 3
7. Hundred Thousands

Second

1. 0
2. 0

3 0
4 7
5 8,000,000
6 13
7 9
8 5,540

Third

1 80
2 103
3 122
4 25
5 4,900
6 500
7 Commutative

Fourth

1 Factors of 12 are : 1,2,3,4,6,12
Factors of 18 are : 1,2,3,6,9,18
Common factors are : 1,2,3,6
GCF = 6
2 The number of kilometers = 6 X 7 = 42 km
3 75 X 3 = 225
4 A = 6 X 2 = 12 cm²
P = (6 + 2) X 2 = 16 cm

(4) Giza - Imbaba District

First

1 Ten millions
2 2
3 40
4 24
5 105
6 7,077
7 0

Second

1 1
2 24
3 20,020,020
4 26
5 28
6 700
7 1 , 2 , 3 , 6
8 34

Third

1 42
2 31
3 55
4 18
5 56,300
6 30
7 49

Fourth

1 Area of the ground = 5 X 5 = 25 m²
2 Factors of 20 are 1 , 2 , 4 , 5 , 10 , 20
Factors of 16 are 1 , 2 , 4 , 8 , 16
Common factors are 1 , 2 , 4
GCF is 4
3 246 ÷ 3 = 82
4 The remaining minutes
= 1,200 – 7 = 1,193 minutes

(5) Alexandria (El-Montzah)

First

1 6
2 12
3 Commutative
4 70,000
5 4
6 12
7 110

Second

1 1
2 3,000
3 69,000
4 632
5 17
6 16
7 1,200
8 4

Third

1 2
2 260
3 100
4 48
5 5,008,004
6 236
7 2,000

Fourth

1 Factors of 9 are 1 , 3 , 9
Factors of 12 are 1 , 2 , 3 , 4 , 6 , 12
Common factors are 1 , 3
GCF is 3
2 y = 9,232 – 3,232 = 6,000
3 The number of lamps
= 6,823 + 5,258 = 12,081 lamps
4 x = 20 ÷ 5 = 4 cm

(6) Alexandria (East)

First

1. 45
2. 22
3. 20
4. S X S
5. 2
6. Commutative
7. >

Second

1. 80
2. 28
3. 2
4. 320
5. 38,275
6. 730,154
7. 5
8. 309

Third

1. 35,000
2. 32
3. Millions
4. 6
5. 3,000
6. 62
7. 3

Fourth

1. Area = 7 X 2 = 14 cm^2
2. Sara paid = 8 X 50 = 400 LE
3. 875 ÷ 5 = 175
4. Factors of 12 are 1 , 2 , 3 , 4 , 6 , 12
   Factors of 15 are 1 , 3 , 5 , 15
   Common factors are 1 , 3
   GCF is 3

(7) Al Behira (Damanhour)

First

1. 1,200
2. <
3. 7
4. 350
5. 36
6. 600
7. 102,356

Second

1. 16
2. 7
3. 1,200
4. 4
5. 9
6. 7,840
7. 5
8. 42

Third

1. 84
2. 600,000
3. 13
4. 3
5. 2
6. 26
7. 4

Fourth

1. The difference = 256,088 – 108,951
   = 147,137 people
2. 20,000 mL = 20,000 ÷ 1,000 = 20 L
   The number of liters needed
   = 50 – 20 = 30 L
3. Factors of 25 are 1 , 5 , 25
   Factors of 15 are 1 , 5 , 7 , 35
   Common factors are 1 , 5
   GCF is 5
4. The number of passengers
   = 784 ÷ 7 = 112 passengers

(8) Al Sharqiya (Faqous)

First

1. 6,000,000
2. 730,000
3. 1
4. 5,080
5. commutative
6. 20
7. 1

Second

1. 16 , 25
2. 2
3. 467
4. 25
5. 4
6. 9
7. 54
8. 34,567

Third

1. 3
2. 24
3. 500
4. 7
5. 9 : 30
6. 2
7. 5

Fourth

1. Area of rectangle (1)
   = 4 X 2 = 8 cm²
   Area of rectangle (2)
   = 7 X 6 = 42 cm²
   Area of the figure
   = 8 + 42 = 50 cm²

7 cm
4 cm
(2)
6 cm
4 cm
(1)

2. Number of teams = 72 ÷ 8 = 9 teams
3. Heba paid = 24 X 8 = 192 LE
4. Factors of 16 are 1 , 2 , 4 , 8 , 16
   Factors of 20 are 1 , 2 , 4 , 5 , 10 , 20
   Common factors are 1 , 2 , 4 GCF is 4

(9) Assiut (El-Badary)

First

1. 4,000,000
2. 500,000
3. 7 m , 35 cm
4. 900
5. 39
6. 327
7. 16

Second

1. 500
2. 20
3. 0
4. 35
5. 2
6. 223
7. 4 : 51
8. 14,248

Third

1. 4
2. 3
3. Commutative
4. 8
5. <
6. 20
7. 300

Fourth

1. The difference = 255,000 – 6,200
   = 248,800 ants
2. Factors of 10 are 1 , 2 , 5 , 10
   Factors of 15 are 1 , 3 , 5 , 15
   Common factors are 1 , 5 -
   GCF is 5
3. 5,000 meters = 5 km
   The number of kilometers = 9 X 5 = 45 km
4. Perimeter = 6 + 4 + 1 + 3 + 5 + 1 = 20 cm

(10) El Gharbia (El-Mahala)

First

1. 10
2. 17
3. 2 X (L + W)
4. 6
5. 4
6. 8,044
7. 15

Second

1. 0
2. 2,132
3. 10 : 07
4. 4
5. 50
6. 28
7. 24
8. 6 L , 360 mL

Third

1. commutative
2. 15
3. 321
4. 340
5. 2,360
6. 7
7. 192

Fourth

1. 42,695 – 7,986,362 – 32,968,327 – 38,251,967
2. Factors of 12 are 1 , 2 , 3 , 4 , 6 , 12
3. 46 X 3 = 138
4. Area = 5 X 5 = 25 km²

(11) Kafr El Shiekh (East)

First

1. 20,000,000
2. 3
3. 48
4. 8
5. 38
6. 200
7. 30

Second

1. 5
2. 6
3. 14
4. 2
5. 3,120
6. 32
7. 654,300
8. 4 m + 78 cm

Third

1. 3
2. commutative
3. 234,000
4. 1,164
5. 3
6. (L + W) X 2
7. 2

Fourth

1.

	100	30	2
7	700	210	14

7 X 132 = 700 + 210 + 14 = 924

2. b = 53,500 + 75,200 = 128,700
3. 455 ÷ 3 = 151 R 2
4. Area of rectangle (1)
   = 6 X 4 = 24 cm^2
   Area of rectangle (2)
   = 2 X 1 = 2 cm^2
   Area of the figure = 24 + 2 = 26 cm^2

6 cm
4 cm
(1)
2 cm
(2)
1cm

(12) Qena (Nagaa Hamady)

First

1. 12,045
2. 21
3. 7
4. 26
5. 5
6. 3
7. 9

Second

1. 7,000,000
2. 8
3. 1,811
4. 12
5. 1,257
6. 1
7. 2,360
8. 27

Third

1. 5,000
2. 80
3. commutative
4. =
5. 75
6. Ten Thousands
7. 14

Fourth

1. 23 X 5 = 115
2. The area = 20 X 8 = 160 cm^2
3. 5 X 5 = 25
4. Factors of 8 are 1 , 2 , 4 , 8
   Factors of 12 are 1 , 2 , 3 , 4 , 6 , 12
   Common factors are 1 , 2 , 4
   GCF is 4

(13) Port Said (Port Fuad)

First

1. 20
2. 8,802,341
3. 2
4. 6,000
5. 50
6. 2
7. 1,300

Second

1. 10
2. 230
3. 3
4. 3
5. 500,000
6. 18
7. 36
8. 140,223

Third

1. 12
2. 7
3. 3
4. additive identity
5. 300
6. 2,000
7. 411

Fourth

1. Factors of 10 are 1 , 2 , 5 , 10
   Factors of 15 are 1 , 3 , 5 , 15
   Common factors are 1 , 5
   GCF is 5
2. 784 ÷ 7 = 112
3. Area = 8 X 8 = 64 cm^2
4. The number of ants =142 + 165=307 ants

(14) Sohag (Tahta)

First

1. 2
2. 2
3. 50,000
4. commutative
5. Thousands
6. 3,000,000
7. 1

Second

1. 17
2. 14
3. 18
4. 12,038,124
5. 6,615
6. 1,200
7. 600
8. 7

Third

1. 6
2. >
3. milliard
4. 5
5. 200
6. 700
7. 5

Fourth

1. the perimeter of room = 6 X 4 = 24 m
2. Factors of 10 are 1 , 2 , 5 , 10
   Factors of 20 are 1 , 2 , 4 , 5 , 10 , 20
   Common factors are 1 , 2 , 5 , 10
   GCF is 10
3.

	100	20	8
3	300	60	24

128 X 3 = 300 + 60 + 24 = 384

4. The total cost = 25,607 + 22,300
   = 47,907 pounds

(15) Sohag (Tema)

First

1. 25
2. 7
3. 900,000
4. 50
5. 15
6. 799
7. 2

Second

1. 1,025,789
2. 4,000
3. 106 R 2
4. 900,660
5. 2
6. 310
7. 32
8. 25

Third

1. 3,300
2. 9,000,600
3. 2 X (L + W)
4. commutative
5. 2,750
6. >
7. 367,000

Fourth

1. The remaining distance = 800 – 675 = 125 km
2. The area = 15 X 10 = 150 cm^2
3. The price of all pens = 100 X 3 = 300 pounds
4. Factors of 24 are 1 , 2 , 3 , 4 , 6 , 12 , 24
   Factors of 12 are 1 , 2 , 3 , 4 , 6 , 12
   Common factors are 1 , 2 , 3 , 4 , 6 , 12
   GCF is 12